# ART-810

## 10.1” Intel Alder Lake-N Series Platform Industrial Rugged Tablet

# User Manual

| Release Date | Revision |
|---|---|
| Aug 2025 | V1.0 |



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# Revision History

| Reversion | Date | Description |
|---|---|---|
| 1.0 | 2025/08/18 | Official Version |
| | | |

# Warning!_____

This equipment will generate, use and radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which is designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user with its own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

# Packing List

**If you discover any of the items listed below are damaged or lost, please contact your local distributor immediately.**

| Items in this package are: | |
|---|---|
| ART-810 10.1” Windows Rugged Tablet | 1pcs |
| Stylus with spring extension cable | 1pcs |
| AC Power Adaptor | 1pcs |
| AC Power Cord | 1pcs |

# Safety Precautions

Follow the messages below to prevent your systems from damage:

◆ Avoid your system from static electricity on all occasions.

◆ Prevent electric shock. Don‘t touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.

◆ Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

Before operating this system, read the following information carefully to protect your system from damages, and extend the life cycle of the system.

1. Check the Line Voltage

• The operating voltage for the power supply should be within the range of 100V to 240V AC; otherwise, the system may be damaged.

2. Environmental Conditions

• Place your ART-810 on a sturdy, level surface. Be sure to allow enough space around the system to have easy access needs.

• Avoid installing your ART-810 system in extremely hot or cold places.

• Avoid direct sunlight exposure for a long period of time (for example, in a closed car in summertime. Also avoid the system from any heating device.). Or do not use ART-810 when it has been left outdoors in a cold winter day.

• Avoid moving the system rapidly from a hot place to a cold place, and vice versa, because condensation may occur inside the system.

• Do not place the system too close to any radio-active device. Radio-active device may cause signal interference.

• Always shut down the operating system before turning off the power.

3. Handling

• Avoid placing heavy objects on the top of the system.

• Do not allow any objects to fall into this device.

4. Good Care

• When the outside case gets stained, remove the stains using neutral washing agent with a dry cloth.

- Never use strong agents such as benzene and thinner to clean the surface of the case.
- If heavy stains are present, moisten a cloth with diluted neutral washing agent or alcohol and then wipe thoroughly with a dry cloth.
- If dust is accumulated on the case surface, remove it by using a special vacuum cleaner for computers.

# Table of Content

# Chapter 1 Getting Started

## 1.1 Features

- 10.1” WUXGA Display OCA direct bonding with Anti-Fingerprint/ Corning Gorilla Glass
- Support P-CAP Touch with Multi-touch Function
- Intel Processor N50/N200
- Dual Battery with Hot-Swappable Design
- Onboard 8GB/16GB LPDDR5
- Total IP65 design
- Wide-Range Operating Temperature and Light Weight Design
- Support Multi-Peripherals and Accessories

## 1.2 Specifications

| | **ART-810** |
|---|---|
| **System** | |
| CPU | Intel Alder Lake-N Processor N50<br>Intel Alder Lake-N Processor N200 |
| Chipset | SoC |
| **BIOS** | |
| BIOS | AMI UEFI BIOS |
| Memory | Onboard LPDDR5 8GB (default)/16GB(by request) |
| **External IO Port** | |
| External I/O | 1 x USB 3.0 Type-A<br>1 x USB-C (w/display port & power delivery)<br>Dual Nano-SIM slot for 4G LTE<br>2MP front camera<br>8MP auto-focus rear camera<br>1 x Headset (Headphone out/Mic-in combo)<br>1 x 2W Speaker |
| **Button** | |
| Button | 6 Buttons_ programmable: |

| | |
|---|---|
| | Windows<br>Power<br>Function Key1<br>Function Key2<br>Volume Up<br>Volume Down |
| **LED** | |
| LED | 1 x Tri-color LED(Green/Yellow/Red) for power/battery status indicate<br>1 x Green LED for WiFi/LTE/5G connection indication |
| **Storage** | |
| Storage | 1 x M.2 NVME SSD, 128GB for default, support up to 1TB. |
| **Display** | |
| Display Type | 10.1” Color TFT LCD |
| Resolution | 1920x1200 |
| Luminance(cd/m$^2$) | 450 nits |
| Backlight Lifetime (hrs) | 30,000 |
| Touch Screen | PCAP Multi Touch (w/Anti-Fingerprint and Corning Gorilla Glass)<br>(Support Glove/Pen/Raindrop/Digitizer) |
| Bonding | Support Optical Bonding (LCD Optical Clear Adhesive direct bonding with Touch Screen) |
| **Communication** | |
| WLAN | 802.11 a/b/g/n/ac/ax (Wi-Fi 6E)+ Bluetooth 5.3 |
| GNSS_WWAN | GPS, GLONASS (option)<br>4G LTE or 5G for North America/Europe/Taiwan/Japan (option) |
| **Audio** | |
| Audio | 1 x Headset (Headphone out/Mic-in Combo)<br>1 x 2W Speaker |
| **TPM** | |
| TPM | Support TPM2.0 |
| **Others** | |
| Others | Support 1 x stylus with dual nibΦ5mm and Φ2.5mm<br>Support Vibrator<br>Support G-Sensor and ambient light sensor |
| **Power** | |
| Power Input | DC Jack 19V or USB Type-C power delivery 20V |

| | |
|---|---|
| Smart Battery | 2 x 11.1V/2100 mAh hot-swappable Li-Ion battery |
| **Mechanical** | |
| Dust & Water Resistance | IP65 |
| Mounting | Wall Mount (Default) & Din Rail back side (optional) |
| Dimensions(mm) | 275 x 194.5 x 21 (W x H x D) |
| Net Weight(Kg) | 1.08 (only tablet) |
| **Reliability and Environmental** | |
| ESD | Contact +/-8V and Air +/-15 kV |
| EMI | Class B |
| Drop Test | MIL-STD-810H |
| Shock/Vibration | MIL-STD-810H |
| Operating Temperature | -10~50°C(AC)<br>-10~50°C(Battery) |
| Storage Temperature | -20~60°C |
| Storage Humidity | 10 to 90% @ 40°C, non-condensing |
| Certification | CE / FCC |
| **Operating System Support** | Microsoft® Windows 11 IoT LTSC 2024 ESD OEI Entry EPKEA |

## 1.3 Diagram

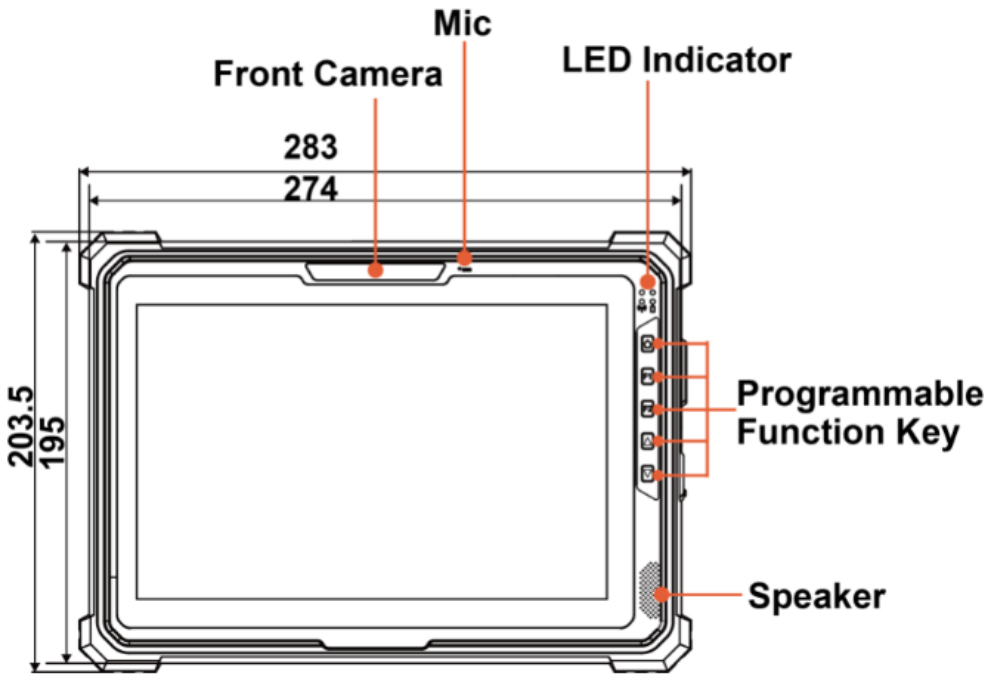



**Figure 1.1: Diagram of ART-810 (Front)**

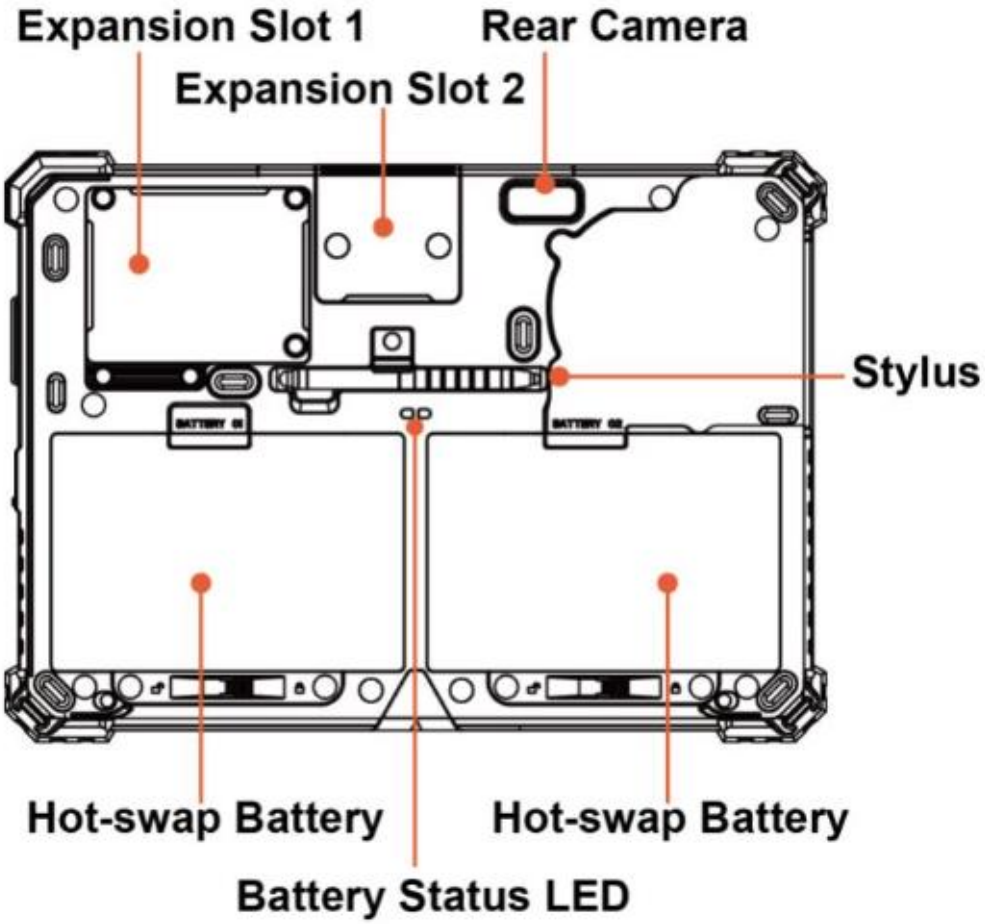



**Figure 1.2: Diagram of ART-810 (Rear)**

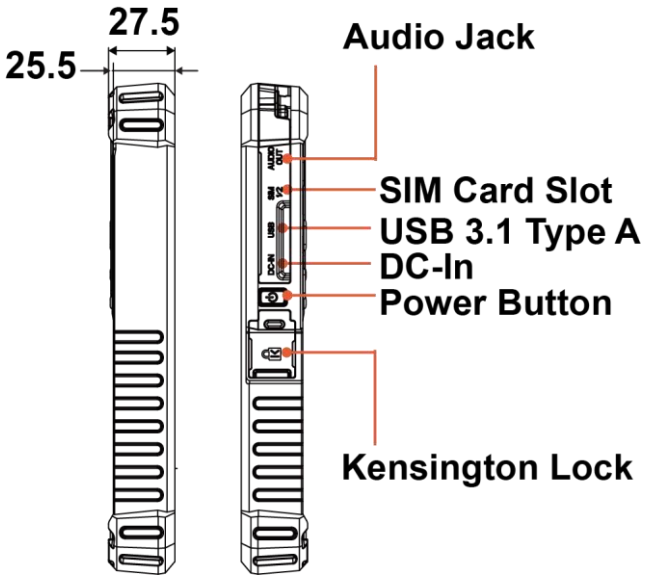



**Figure 1.3: Diagram of ART-810 (Side)**

**Figure 1.4: Diagram of ART-810 (Top)**

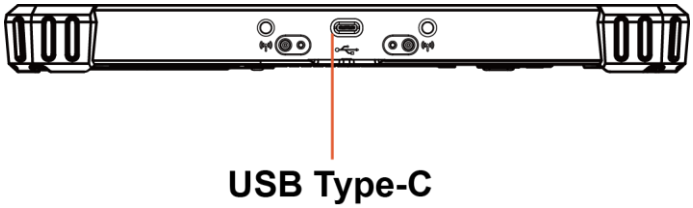



**Figure 1.5: Diagram of ART-810 (Bottom)**

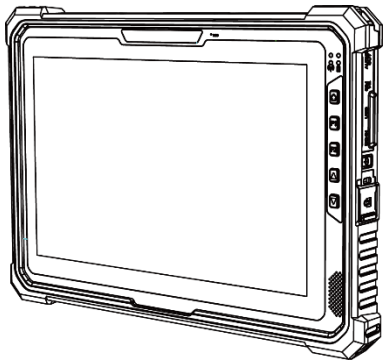


**Figure 1.6: Diagram of ART-810 (Quarter)**

## 1.4 Brief Description of ART-810

ART-810 is a high-performance Windows Rugged Tablet empowered by Intel® Alder Lake N Series Processor. It features 10.1" display (1920 x 1200 resolution / 450 nits / 30,000 hours) optical clear Adhesive with Anti-fingerprint / rugged corning gorilla glass P-Cap touch and highlights durable design with IP65 Rating and 1.5m Drop Test (MIL-STD-810H), dual-main battery design with hot-swap. This user manual is intended for service personnel with strong hardware background. It is not intended for general users.

**Figure 1.4: Front View of ART-810**

**Figure 1.5: Rear View of ART-810**

# Chapter 2 Hardware

## 2.1 Motherboard Jumpers and Connectors Location

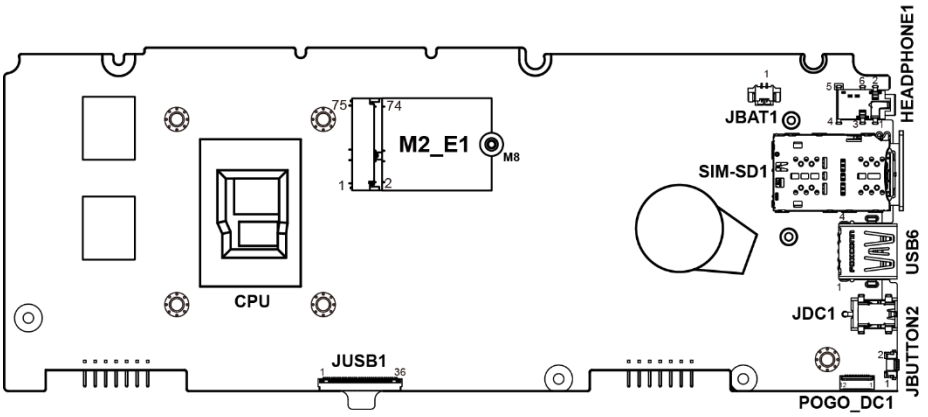



**Figure 2.2: Jumpers and Connectors Location- Board Top**

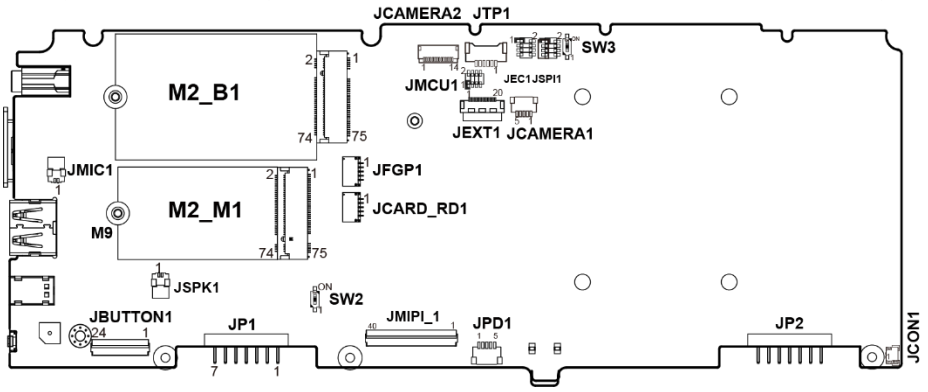



**Figure 2.3: Jumpers and Connectors Location- Board Bottom**

# 2.2 Jumpers Setting and Connectors

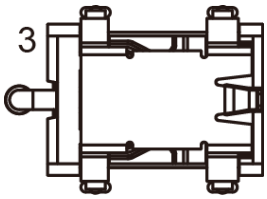
| Jumper Description | NAME |
|---|---|
| PWM Program Enable Switch | SW2 |
| RTC Battery Switch | SW3 |

| CONNECTOR Description | NAME |
|---|---|
| DC IN Jack Connector (MB top side) | JDC1 |
| RTC Battery Connector (MB top side) | JBAT1 |
| Power Button Connector (MB top side) | JBUTTON2 |
| Main to Button BD Connector | JBUTTON1 |
| Rear Camera Connector | JCAMERA1 |
| Front Camera Connector | JCAMERA2 |
| USB Type-C Connector (MB top side) | JUSB1 |
| Expansion 1 Slot Connector A | JCARD_RD1 |
| Expansion 1 Slot Connector B | JFGP1 |
| Vibrator Connector | JCON1 |
| MIPI Connector | JMIPI_1 |
| Expansion 2 Slot Connector | JEXT1 |
| MCU Update Connector | JMCU1 |
| POGO IN Power Connector (MB top side) | POGO_DC1 |
| Microphone Connector | JMIC1 |
| Speaker Connector | JSPK1 |
| Headphone Connector (MB top side) | HEADPHONE1 |
| Battery Connectors | JP1, JP2 |
| PD Update Connector | JPD1 |
| SPI Update Connector | JSPI1 |
| Touch Screen Connector | JTP1 |
| EC Update Connector | JEC1 |
| M.2 B Key Slot | M2_B1 |
| M.2 M Key Slot | M2_M1 |
| M.2 E Key Slot (MB top side) | M2_E1 |
| Dual-Nano-SIM Slot | SIM-SD1 |

## 1. DC IN Jack Connector (JDC1):

**Connector Location: JDC1**
**Description:** DC IN Jack Connector (located on the top side of the main board)

| PIN | ASSIGNMENT |
|---|---|
| 3 | DCIN |
| G1 | GND |
| G2 | GND |
| G3 | GND |
| G4 | GND |

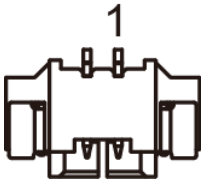


JDC1

## 2. RTC Battery Connector (JBAT1):

**Connector Location: JBAT1**
**Description:** RTC Battery Connector (located on the top side of the main board)

| PIN | ASSIGNMENT |
|---|---|
| 1 | VRTC_BATT |
| 2 | GND |

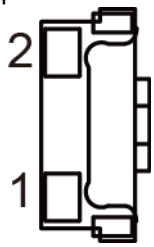


JBAT1

## 3. Power Button Connector (JBUTTON2):

**Connector Location: JBUTTON2**
**Description:** Power Button Connector 2 (located on the top side of the main board)

| PIN | ASSIGNMENT |
|---|---|
| 2 | PS_ON_SW |
| 1 | GND |



JBUTTON2

## 4. Main to Button BD Connector(JBUTTON1):

**Connector Location: JBUTTON1**
**Description:** Main to Button BD Connector (located on the bottom side of the main board)

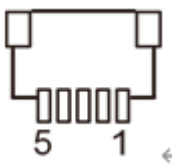

**JBUTTON1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | V3P3A |
| 2 | V3P3A |
| 3 | VOLUM_UP |
| 4 | VOLUM_DOWN |
| 5 | WIN_KEY |
| 6 | ROTATE_LOCK |
| 7 | FN_BARCODE_SW |
| 8 | BAT_LOW_LED |
| 9 | PWR_LED |
| 10 | ALARM_LED |
| 11 | GND |
| 12 | ALS_INT |
| 13 | ISH_I2C1_SDA_ALS |
| 14 | ISH_I2C1_SCL_ALS |
| 15 | GND |
| 16 | V5P0A |
| 17 | V5P0A |
| 18 | WIFI_RF_SW |
| 19 | 5G_RF_SW |
| 20 | NC |
| 21 | V3.3A_WLAN |
| 22 | WIFI_5G_LED |
| 23 | V3.3A_WWAN |
| 24 | NC |

## 5. Rear Camera Connector (JCAMERA1):

**Connector Location: JCAMERA1**
**Description:** Rear Camera Connector (located on the bottom side of the main board)

| PIN | ASSIGNMENT |
|---|---|
| 1 | V5P0_CAM1 |
| 2 | USB2_P2_DN |
| 3 | USB2_P2_DP |
| 4 | GND |
| 5 | NC |

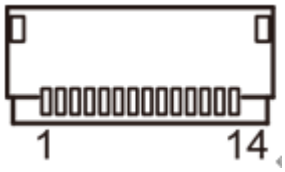



**JCAMERA1**

## 6. Front Camera Connector (JCAMERA2):

**Connector Location: JCAMERA2**
**Description:** Front Camera Connector (located on the bottom side of the main board)

| PIN | ASSIGNMENT |
|---|---|
| 1 | V5P0_CAM2 |
| 2 | V5P0_CAM2 |
| 3 | V5P0_CAM2 |
| 4 | V3P3_CAM2 |
| 5 | V3P3_CAM2 |



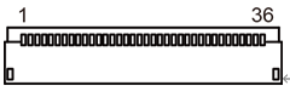

**JCAMERA2**

## 7. USB Type-C Connector (JUSB1):

**Connector Location: JUSB1**
**Description:** USB Type-C Connector (located on the top side of the main board)

| PIN | ASSIGNMENT |
|---|---|
| 1 | VBUS_OUT |
| 2 | VBUS_OUT |
| 3 | VBUS_OUT |
| 4 | VBUS_OUT |
| 5 | VBUS_OUT |
| 6 | VBUS_OUT |
| 7 | VBUS_OUT |
| 8 | VBUS_OUT |
| 9 | VBUS_OUT |
| 10 | VBUS_OUT |
| 11 | GND |
| 12 | TCP0_TX1_DN |
| 13 | TCP0_TX1_DP |
| 14 | GND |
| 15 | TCP0_TXRX1_DP |
| 16 | TCP0_TXRX1_DN |
| 17 | GND |
| 18 | CCG6_SBU1 |
| 19 | CCG6_CC1 |
| 20 | EC_HALL_SW1 |
| 21 | GND |
| 22 | TCP0_TX0_DP |
| 23 | TCP0_TX0_DN |
| 24 | GND |
| 25 | TCP0_TXRX0_DP |
| 26 | TCP0_TXRX0_DN |
| 27 | GND |
| 28 | CCG6_SBU2 |
| 29 | CCG6_CC2 |

| PIN | ASSIGNMENT |
|---|---|
| 30 | EC_HALL_SW2 |
| 31 | GND |
| 32 | GND |
| 33 | GND |
| 34 | USB2_P6_DP |
| 35 | USB2_P6_DN |
| 36 | +3.3V |



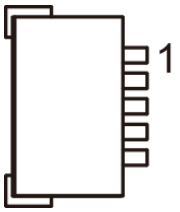

**JUSB1**

## 8. Expansion 1 Slot Connector A (JCARD_RD1):

**Connector Location: JCARD_RD1**

**Description:** USB 2.0 Connector (located on the bottom side of the main board)

| PIN | ASSIGNMENT |
|---|---|
| 1 | +5V |
| 2 | +5V |
| 3 | USB2_P7_DN |
| 4 | USB2_P7_DP |
| 5 | GND |



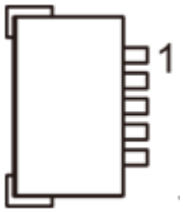

**JCARD_RD1**

## 9. Expansion 1 Slot Connector B (JFPG1):

**Connector Location: JFPG1**

**Description:** USB 2.0 Connector (Option: USB2.0 co-lay with JEXT1)

| PIN | ASSIGNMENT |
|---|---|
| 1 | +5V |
| 2 | +5V |
| 3 | USB2_P5_DN |
| 4 | USB2_P5_DP |
| 5 | GND |




**JFPG1**

## 10. Vibrator Connector (JCON1):

**Connector Location: JCON1**

**Description:** Vibrator Connector (located on the bottom side of the main board)

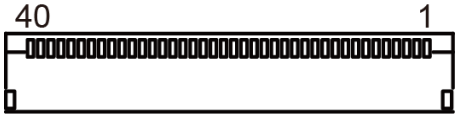
| PIN | ASSIGNMENT |
|---|---|
| 1 | V3P3A |
| 2 | GND |


**JCON1**

## 11. MIPI Connector (JMIPI_1):

**Connector Location: JMIPI_1**

**Description:** MIPI (Mobile Industry Processor Interface) Connector (located on the bottom side of the main board)



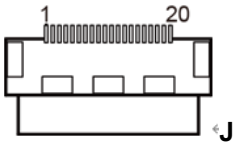

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 1 | NC | 2 | V3P3S_MIPI |
| 3 | V3P3S_MIPI | 4 | NC |
| 5 | NC | 6 | ID_V0 |
| 7 | GND | 8 | MDSI_A_DN0_C |
| 9 | MDSI_A_DP0_C | 10 | GND |
| 11 | MDSI_A_DN1_C | 12 | MDSI_A_PN1_C |
| 13 | GND | 14 | MDSI_A_CLKN_C |
| 15 | MDSI_A_CLKP_C | 16 | GND |
| 17 | MDSI_A_DN2_C | 18 | MDSI_A_DP2_C |
| 19 | GND | 20 | MDSI_A_DN3_C |
| 21 | MDSI_A_DP3_C | 22 | GND |
| 23 | NC | 24 | NC |
| 25 | GND | 26 | NC |
| 27 | NC | 28 | GND |
| 29 | NC | 30 | GND |
| 31 | LEDA- | 32 | LEDA- |
| 33 | NC | 34 | NC |
| 35 | NC | 36 | NC |
| 37 | NC | 38 | NC |
| 39 | LEDA+ | 40 | LEDA+ |

## 12. Expansion 2 Slot Connector (JEXT1):

**Connector Location: JEXT1**

**Description:** Expansion 2 Slot Connector (located on the bottom side of the main board)

(Option: USB2.0 co-lay with JFGP1)




**JEXT1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | +5V |
| 2 | +5V |
| 3 | +5V |
| 4 | +5V |
| 5 | SCAN_PDN |
| 6 | BEEPER_OUT |
| 7 | WAKE_IN_BARCODE |
| 8 | SCAN_EN_SW_D |
| 9 | GND |
| 10 | USB2_P5_DN |
| 11 | USB2_P5_DP |
| 12 | GND |
| 13 | USB31_P1_RX_DN_C |
| 14 | USB31_P1_RX_DP_C |
| 15 | GND |
| 16 | USB31_P1_TX_DN_C |
| 17 | USB31_P1_TX_DP_C |
| 18 | GND |
| 19 | PM_SLP_LAN_N |
| 20 | NC |

## 13. MCU Update Connector (JMCU1):

**Connector Location: JMCU1**

**Description:** MCU Update Connector (located on the bottom side of the main board)

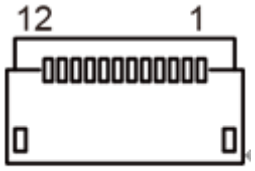
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 1 | +3V | 2 | GND |
| 3 | M-SWDIO | 4 | NC |
| 5 | M-SWCLK | 6 | NC |
| 7 | M-NRST | 8 | NC |


**JMCU1**

## 14. POGO IN Power Connector (POGO_DC1):

**Connector Location: POGO_DC1**

**Description:** POGO In Power Connector (located on the top side of the main board)



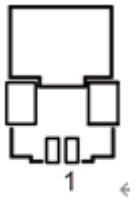

**POGO_DC1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | GND |
| 2 | GND |
| 3 | GND |
| 4 | GND |
| 5 | GND |
| 6 | GND |
| 7 | DC19V_IN |
| 8 | DC19V_IN |
| 9 | DC19V_IN |
| 10 | DC19V_IN |
| 11 | DC19V_IN |
| 12 | DC19V_IN |

## 15. Microphone Connector (JMIC1):

**Connector Location: JMIC1**

**Description:** Microphone Connector (located on the bottom side of the main board)



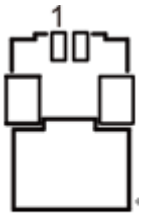

**JMIC1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | GND |
| 2 | MIC1 |

## 16. Speaker Connector (JSPK1):

**Connector Location: JSPK1**

**Description:** Speaker Connector (located on the bottom side of the main board)



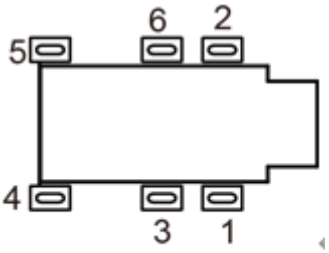

**JSPK1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | AMP_OUTL+ |
| 2 | AMP_OUTL- |

## 17. Headphone Connector (HEADPHONE1):

**Connector Location: HEADPHONE1**

**Description:** Headphone Connector (located on the top side of the main board)



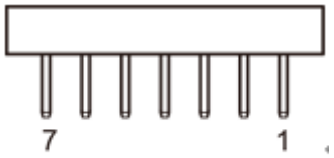

**HEADPHONE1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | HD_MIC2-R_L |
| 2 | GND |
| 3 | LINE-OUT-R |
| 4 | LINE-OUT-L |
| 5 | LINE2-JD |
| 6 | GND |

## 18. Battery Connector 1 (JP1):

**Connector Location: JP1**

**Description:** Battery Connector 1 (located on the bottom side of the main board)



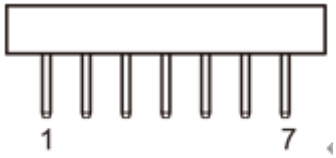

**JP1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | V_B1_IN |
| 2 | V_B1_IN |
| 3 | MCU_BAT_SENSE1 |
| 4 | BAT_SCL1 |
| 5 | BAT_SDA1 |
| 6 | GND |
| 7 | GND |

## 19. Battery Connector 2 (JP2):

**Connector Location: JP2**

**Description:** Battery Connector 2 (located on the bottom side of the main board)



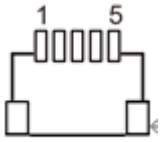

**JP2**

| PIN | ASSIGNMENT |
|---|---|
| 1 | V_B2_IN |
| 2 | V_B2_IN |
| 3 | MCU_BAT_SENSE2 |
| 4 | BAT_SCL2 |
| 5 | BAT_SDA2 |
| 6 | GND |
| 7 | GND |

## 20. PD Update Connector (JPD1):

**Connector Location: JPD1**

**Description:** PD (Power Display) Update Connector (located on the bottom side of the main board)



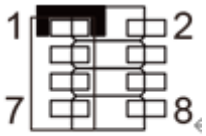

**JPD1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | VDDD_SUPPLY |
| 2 | GND |
| 3 | CCG6_XRES |
| 4 | CCG6_SWD_CLK |
| 5 | CCG6_SWD_IO |

## 21. SPI Update Connector (JSPI1):

**Connector Location: JSPI1**

**Description:** SPI Update Connector (located on the bottom side of the main board)



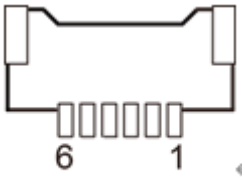

**JSPI1**

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 1 | SPI_VDD | 2 | GND |
| 3 | SPI0_CS0_R_N | 4 | SPI0_CLK_R |
| 5 | SPI0_MISO_R | 6 | SPI0_MOSI_R |
| 7 | SPI0_HOLD_N | 8 | SPI0_WP_N |

## 22. Touch Screen Connector (JTP1):

**Connector Location: JTP1**

**Description:** Touch Screen Connector (located on the bottom side of the main board)



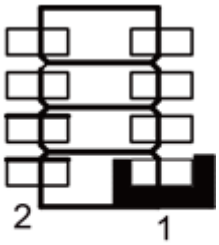

**JTP1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | +3.3V |
| 2 | GND |
| 3 | GND |
| 4 | I2C0_SCL |
| 5 | I2C0_SDA |
| 6 | GND |
| 7 | INT_TP |
| 8 | RST_TP |

## 23. EC Update Connector (JEC1):

**Connector Location: JEC1**

**Description:** EC (Embedded Controller) Update Connector (located on the bottom side of the main board)



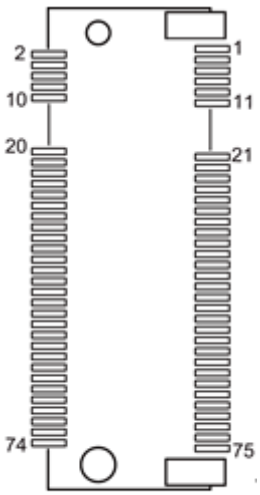

**JEC1**

| PIN | ASSIGNMENT |
|---|---|
| 1 | +3.3V |
| 2 | GND |
| 3 | EC_UART_RX_R |
| 4 | VAL_EC_JTAG_TCK_R |
| 5 | EC_UART_TX_R |
| 6 | VAL_EC_JTAG_TMS_R |
| 7 | NC |
| 8 | NC |

## 24. M.2 B Key Slot (M2_B1):

**Connector Location: M2_B1**

**Description:** M.2 B Key Connector for SSD (located on the bottom side of the main board)




**M2_B1**

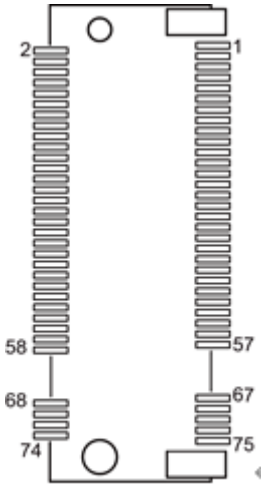
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 1 | M.2_WWAN_DET | 2 | V3.3A_WWAN |
| 3 | GND | 4 | V3.3A_WWAN |
| 5 | GND | 6 | GPPC_WWAN_FCP_OFF |
| 7 | USB2_P4_DP | 8 | M.2_WWAN_DISABLE |
| 9 | USB2_P4_DN | 10 | 5G_LED |
| 11 | GND | 12 | Mechanical Key |
| 13 | Mechanical Key | 14 | Mechanical Key |
| 15 | Mechanical Key | 16 | Mechanical Key |
| 17 | Mechanical Key | 18 | Mechanical Key |
| 19 | Mechanical Key | 20 | NC |
| 21 | M_2_B_CONFIG0 | 22 | NC |
| 23 | NC | 24 | NC |
| 25 | SAR_DPR_WWAN | 26 | NC |
| 27 | GND | 28 | NC |
| 29 | USB31_P3_RX_DN | 30 | SIM1_RESET |
| 31 | USB31_P3_RX_DP | 32 | SIM1_CLK |

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 33 | GND | 34 | SIM1_DATA |
| 35 | USB31_P3_TX_DN | 36 | SIM1_PWR |
| 37 | USB31_P3_TX_DP | 38 | NC |
| 39 | GND | 40 | SIM_DET_CONN |
| 41 | PCIE3_P4_RX_DN | 42 | SIM2_DATA |
| 43 | PCIE3_P4_RX_DP | 44 | SIM2_CLK |
| 45 | GND | 46 | SIM2_RESET |
| 47 | PCIE3_P4_TX_DN | 48 | SIM2_PWR |
| 49 | PCIE3_P4_TX_DP | 50 | M.2_WWAN_PERST |
| 51 | GND | 52 | M.2_CLKREQ |
| 53 | CLK_SRC4_DN | 54 | M.2_WWAN_WAKE |
| 55 | CLK_SRC4_DP | 56 | NC |
| 57 | GND | 58 | NC |
| 59 | NC | 60 | GPPC_F6 |
| 61 | NC | 62 | GPPC_H9 |
| 63 | NC | 64 | GPPC_H8 |
| 65 | NC | 66 | M.2_SIM1_DET |
| 67 | GPP_F1_RST_N | 68 | NC |
| 69 | NC | 70 | V3.3A_WWAN |
| 71 | GND | 72 | V3.3A_WWAN |
| 73 | GND | 74 | V3.3A_WWAN |
| 75 | NC | - | - |

## 25. M.2 M Key Slot (M2_M1):

**Connector Location: M2_M1**

**Description:** M.2 M Key Connector for SSD (located on the bottom side of the main board)




M2_M1

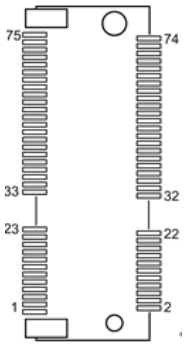
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 1 | GND | 2 | V3P3S |
| 3 | GND | 4 | V3P3S |
| 5 | PCIE_P12_M.2_SSD_RX_DN | 6 | M.2_SSD_PWROFF |
| 7 | PCIE_P12_M.2_SSD_RX_DP | 8 | M2_SSD_PLN |
| 9 | GND | 10 | DAS/DSS |
| 11 | PCIE_P12_M.2_SSD_TX_R_DN | 12 | V3P3S |
| 13 | PCIE_P12_M.2_SSD_TX_R_DP | 14 | V3P3S |
| 15 | GND | 16 | V3P3S |
| 17 | PCIE_P11_M.2_SSD_RX_DN | 18 | V3P3S |
| 19 | PCIE_P11_M.2_SSD_RX_DP | 20 | NC |
| 21 | GND | 22 | NC |
| 23 | PCIE_P11_M.2_SSD_TX_R_DN | 24 | NC |
| 25 | PCIE_P11_M.2_SSD_TX_R_DP | 26 | NC |
| 27 | GND | 28 | NC |
| 29 | PCIE_P10_M.2_SSD_RX_DN | 30 | NC |
| 31 | PCIE_P10_M.2_SSD_RX_DP | 32 | NC |
| 33 | GND | 34 | NC |

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 35 | PCIE_P10_M.2_SSD_TX_R_DN | 36 | NC |
| 37 | PCIE_P10_M.2_SSD_TX_R_DP | 38 | NC |
| 39 | GND | 40 | NC |
| 41 | PCIE_P9_M.2_SSD_RX_DN | 42 | NC |
| 43 | PCIE_P9_M.2_SSD_RX_DP | 44 | NC |
| 45 | GND | 46 | NC |
| 47 | PCIE_P9_M.2_SSD_TX_R_DN | 48 | NC |
| 49 | PCIE_P9_M.2_SSD_TX_R_DP | 50 | M2_KEYM_SSD_RST |
| 51 | GND | 52 | GPPC_D5_SRCCLKREQ |
| 53 | CLK_SRC0_M2_SSD_DN | 54 | WAKE |
| 55 | CLK_SRC0_M2_SSD_DP | 56 | NC |
| 57 | GND | 58 | NC |
| 59 | M_KEY_59 | 60 | M_KEY_60 |
| 61 | M_KEY_61 | 62 | M_KEY_62 |
| 63 | M_KEY_63 | 64 | M_KEY_64 |
| 65 | M_KEY_65 | 66 | M_KEY_66 |
| 67 | NC | 68 | SUS_CLK |
| 69 | M2_SSD_PEDET | 70 | V3P3S |
| 71 | GND | 72 | V3P3S |
| 73 | GND | 74 | V3P3S |
| 75 | GND | - | - |

## 26. M.2 E Key Slot (M2_E1):

**Connector Location: M2_E1**

**Description:** M.2 E Key Connector for SSD (located on the top side of the main board)




**M2_E1**

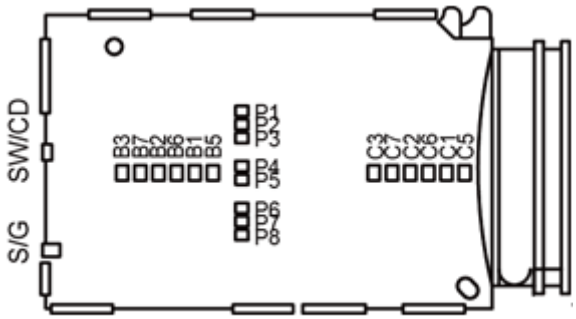
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 1 | GND | 2 | V3.3A_WLAN |
| 3 | USB2_P8_DP | 4 | V3.3A_WLAN |
| 5 | USB2_P8_DN | 6 | WIFI_LED |
| 7 | GND | 8 | NC |
| 9 | NC | 10 | NC |
| 11 | NC | 12 | NC |
| 13 | GND | 14 | NC |
| 15 | NC | 16 | NC |
| 17 | NC | 18 | GND |
| 19 | GND | 20 | NC |
| 21 | NC | 22 | NC |
| 23 | NC | 24 | Connector E Key |
| 25 | Connector E Key | 26 | Connector E Key |
| 27 | Connector E Key | 28 | Connector E Key |
| 29 | Connector E Key | 30 | Connector E Key |
| 31 | Connector E Key | 32 | NC |

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|---|---|---|---|
| 33 | GND | 34 | NC |
| 35 | PCIE_P7_M2_WL_TX_DP | 36 | NC |
| 37 | PCIE_P7_M2_WL_TX_DN | 38 | MLK_RST_N |
| 39 | GND | 40 | MLK_DATA |
| 41 | PCIE_P7_RX_DP | 42 | MLK_CLK |
| 43 | PCIE_P7_RX_DN | 44 | DISC_WLAN_COFX3 |
| 45 | GND | 46 | DISC_WLAN_COFX2 |
| 47 | CLK_SRC3_DP | 48 | DISC_WLAN_COFX1 |
| 49 | CLK_SRC3_DN | 50 | SUS_CLK |
| 51 | GND | 52 | M.2_WLAN_PERST |
| 53 | SRCCLKREQ3 | 54 | GPPC_A13_BT_RF_KILL |
| 55 | WIFI_WAKE | 56 | WIFI_RF_KILL |
| 57 | GND | 58 | NC |
| 59 | NC | 60 | NC |
| 61 | NC | 62 | NC |
| 63 | GND | 64 | NC |
| 65 | NC | 66 | NC |
| 67 | NC | 68 | NC |
| 69 | GND | 70 | NC |
| 71 | NC | 72 | V3.3A_WLAN |
| 73 | NC | 74 | V3.3A_WLAN |
| 75 | GND | - | - |

## 27. Dual Nano-SIM Slot (SIM-SD1):

**Connector Location: SIM-SD1**

**Description:** Dual-Nano-SIM Slot (located on the top side of the main board)




**SIM-SD1**

| PIN | ASSIGNMENT |
|---|---|
| SW/CD | SIM_DET_CONN |
| S/GND | GND |
| P1 | NC |
| P2 | NC |
| P3 | NC |
| P4 | NC |
| P5 | NC |
| P6 | NC |
| P7 | NC |
| P8 | NC |
| C1 | SIM1_PWR |
| B1 | SIM2_PWR |
| C2 | SIM1_RESET |
| B2 | SIM2_RESET |
| C3 | SIM1_CLK |
| B3 | SIM2_CLK |
| C5 | GND |
| B5 | GND |
| C6 | NC |
| B6 | NC |
| C7 | SIM1_DATA |
| B7 | SIM2_DATA |

# Chapter 3 BIOS Setup

## 3.1 BIOS Setup

The ART-810 System uses an AMI (American Megatrends Incorporated) Aptio BIOS that is stored in the Serial Peripheral Interface Flash Memory (SPI Flash) and can be updated. The SPI Flash contains the built-in BIOS setup program, Power-On Self-Test (POST), PCI auto-configuration utility, LAN EEPROM information, and Plug and Play support.

Aptio is AMI's BIOS firmware based on the UEFI (Unified Extensible Firmware Interface) Specifications and the Intel Platform Innovation Framework for EFI. The UEFI specification defines an interface between an operating system and platform firmware. The interface consists of data tables that contain platform-related information, boot service calls, and runtime service calls that are available to the operating system and its loader. These elements provide standard environment for booting an operating system and running pre-boot applications. The following diagram shows the Extensible Firmware Interface's location in the software stack.

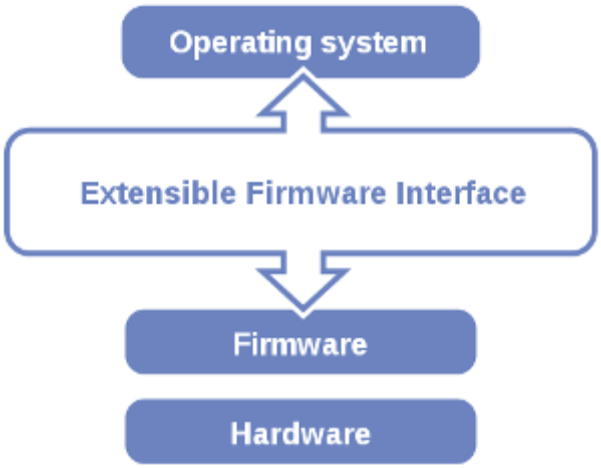



Figure 5-1. Extensible Firmware Interface Diagram

UEFI BIOS provides a user interface allow users the ability to modify hardware configuration, e.g. change the system date and time, enable or disable a system component, decide bootable device priorities, setup personal password, etc., which is convenient for modifications and customization of the computer system and allows technicians another method for finding solutions if hardware has any problems.

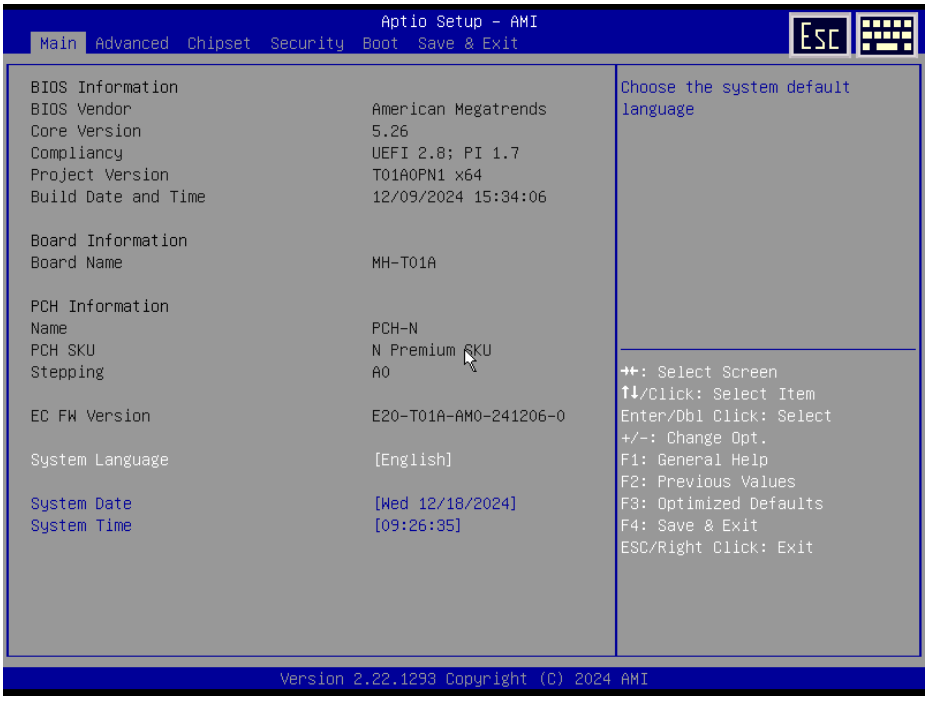
The BIOS Setup program can be used to view and change the BIOS settings for the computer. The BIOS Setup program is accessed by pressing the <Del> or <ESC> key after the POST memory test begins and before the operating system boot begins. The settings are shown below.

## 3.2 Accessing Setup Utility

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines and the following message will appear on the lower screen:

**POST Screen with AMI Logo**

As long as this message is present on the screen you may press the <Del> key (the one that shares the decimal point at the bottom of the number keypad) to access the Setup program. In a moment, the main menu of the Aptio Setup Utility will appear on the screen:

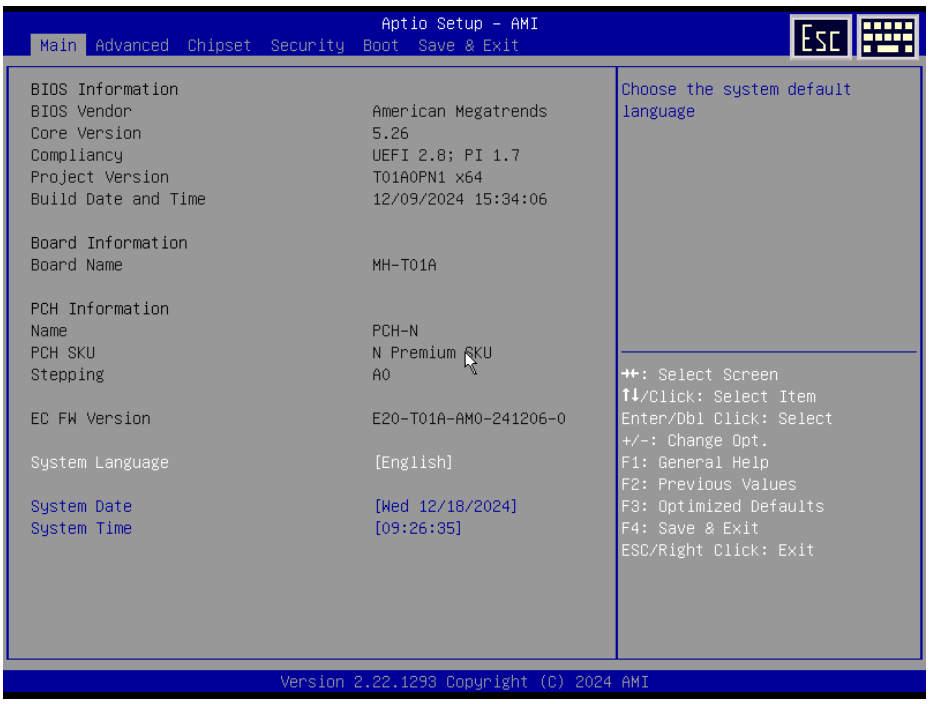



**BIOS Setup Menu Initialization Screen**

You may move the cursor by up/down keys to highlight the individual menu items. As you highlight each item, a brief description of the highlighted selection will appear at the bottom of the screen.

## 3.3 Main Settings

The **Main** menu allows you to view the BIOS Information and change the system date and time. Use tab to switch between date elements. Use <↑> or <↓> arrow keys to highlight the item and enter the value you want in each item. This screen also displays the BIOS version (project) and BIOS Build Date and Time.



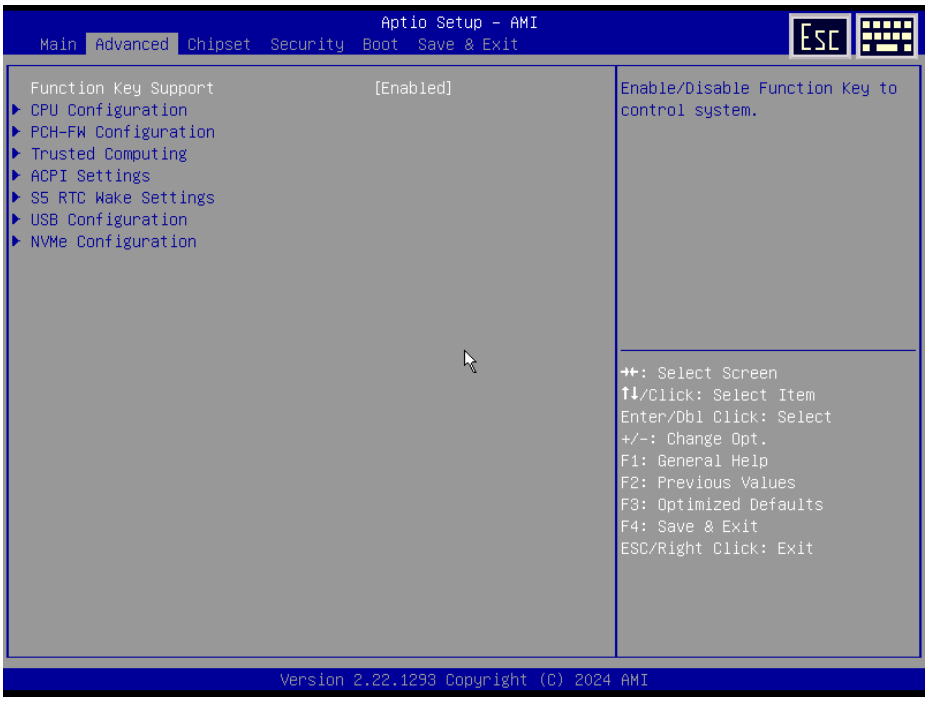

**BIOS Main Menu**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| BIOS Vendor | No changeable options | Displays the name of the BIOS vendor. |
| Core Version | No changeable options | Displays the current BIOS core version. |
| Compliancy | No changeable options | Displays the current UEFI version. |
| Project Version | No changeable options | Displays the version of the BIOS currently installed on the platform. |
| Build Date and Time | No changeable options | Displays the date that the current BIOS version is built. |
| Board Name | No changeable options | Display the name of the Board |
| Name | No changeable options | Displays the name of the PCH |
| PCH SKU | No changeable options | Displays the SKU for the PCH |
| Stepping | No changeable options | Displays the stepping of the PCH |

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| EC FW Version | No changeable options | Displays the EC FW Version |
| System Date | Month, day, year | Sets the system date. The format is [Day Month/ Date/ Year]. Users can directly enter values or use <+> or <-> arrow keys to increase/decrease it. The "Day" is automatically changed. |
| System Time | Hour, minute, second | Sets the system time. The format is [Hour: Minute: Second]. Users can directly enter values or use <+> or <-> arrow keys to increase/decrease it. |

## 3.4 Advanced Settings

This menu provides advanced configurations such as CPU Configuration, PCH-FW Configuration, Trusted Computing, ACPI Settings, S5 RTC Wake Settings, USB Configuration and NVMe Configuration.

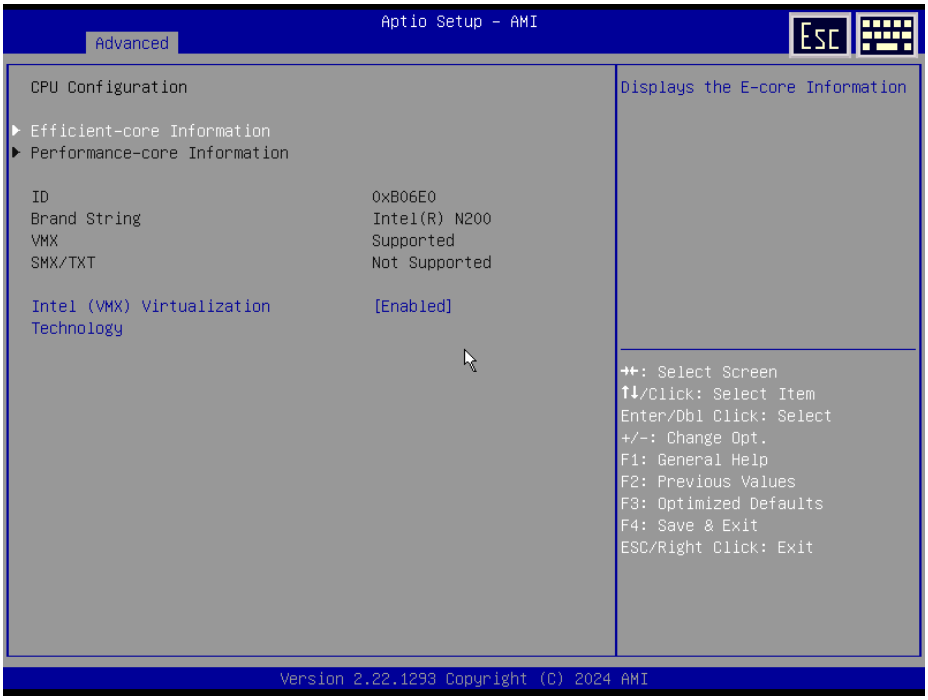



**BIOS Advanced Menu**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Function Key Support | - Disabled<br>- Enabled (Default) | Enables / Disables Function Key to control system. |
| CPU Configuration | Sub-Menu | CPU Configuration Parameters. |
| PCH-FW Configuration | Sub-Menu | Management Engine Technology Parameters. |
| Trusted Computing | Sub-Menu | Trusted Computing Settings |
| ACPI Settings | Sub-Menu | System ACPI Parameters. |
| S5 RTC Wake Settings | Sub-Menu | Enables system to wake from S5 using RTC alarm. |
| USB Configuration | Sub-Menu | USB Configuration Parameters. |
| NVMe Configuration | Sub-Menu | NVMe Device Options Settings. |

### 3.4.1 CPU Configuration

The **CPU Configuration** provides advanced CPU settings and some information about CPU.

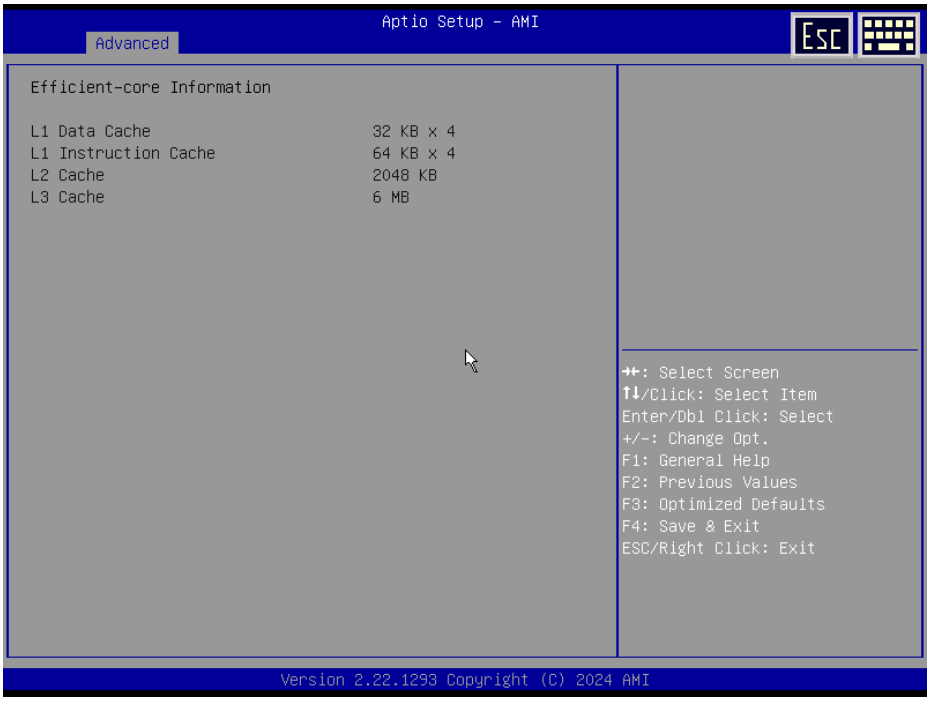



**CPU Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Efficient-core Information | Sub-Menu | Displays the E-core Information |
| Performance-core Information | Sub-Menu | Displays the P-core Information |
| ID | No changeable options | Displays the CPU ID. |
| Brand String | No changeable options | Displays the Brand String of the Performance Processor. |
| VMX | No changeable options | CPU/VMX hardware support for virtual machines. |
| SMX/TXT | No changeable options | Secure Mode extensions support. |
| Intel (VMX) Virtualization Technology | - Disabled<br>- Enabled (Default) | When enabled, VMM can utilize the additional hardware capabilities provided by Vanderpool Technology |

### Efficient-core Information

The **Efficient-core Information** provides some information about E-Core CPU.

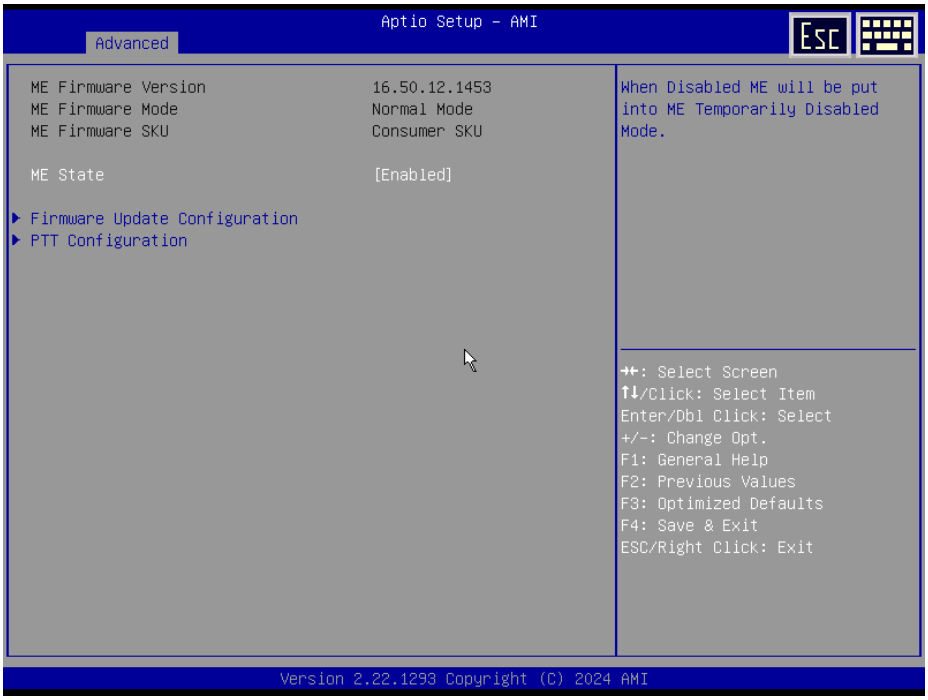



**Efficient-core Information Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| L1 Data Cache | No changeable options | Displays the Efficient-core L1 Data Cache Size. |
| L1 Instruction Cache | No changeable options | Displays the Efficient-core L1 Instruction Cache Size. |
| L2 Cache | No changeable options | Displays the Efficient-core L2 Cache Size. |
| L3 Cache | No changeable options | Displays the Efficient-core L3 Cache Size. |

### 3.4.2 PCH-FW Configuration

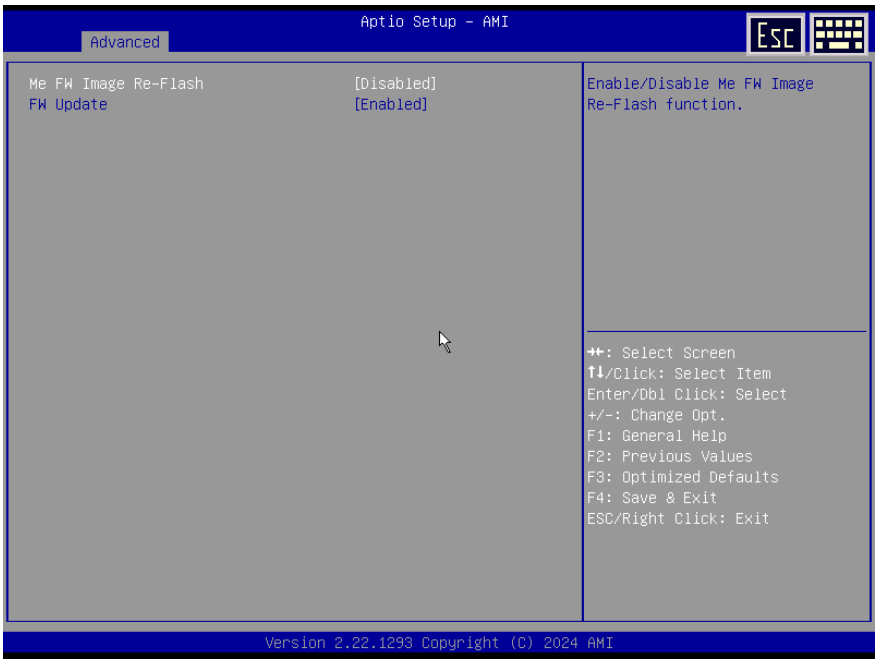
The **PCH-FW** allows users to view the information about ME (Management Engine) firmware information, such ME firmware version, firmware mode and firmware SKU, ME State, Firmware Update Configuration and PTT Configuration.




**PCH-FW Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| ME Firmware Version | No changeable options | Displays the ME Firmware Version. |
| ME Firmware Mode | No changeable options | Displays the ME Firmware Mode. |
| ME Firmware SKU | No changeable options | Displays the ME Firmware SKU. |
| ME State | - Disabled<br>- Enabled (Default) | When Disabled ME will be put into ME Temporarily Disabled Mode |
| Firmware Update Configuration | Sub-Menu | Configure Management Engine Technology Parameters. |
| PTT Configuration | Sub-Menu | Configures PTT |

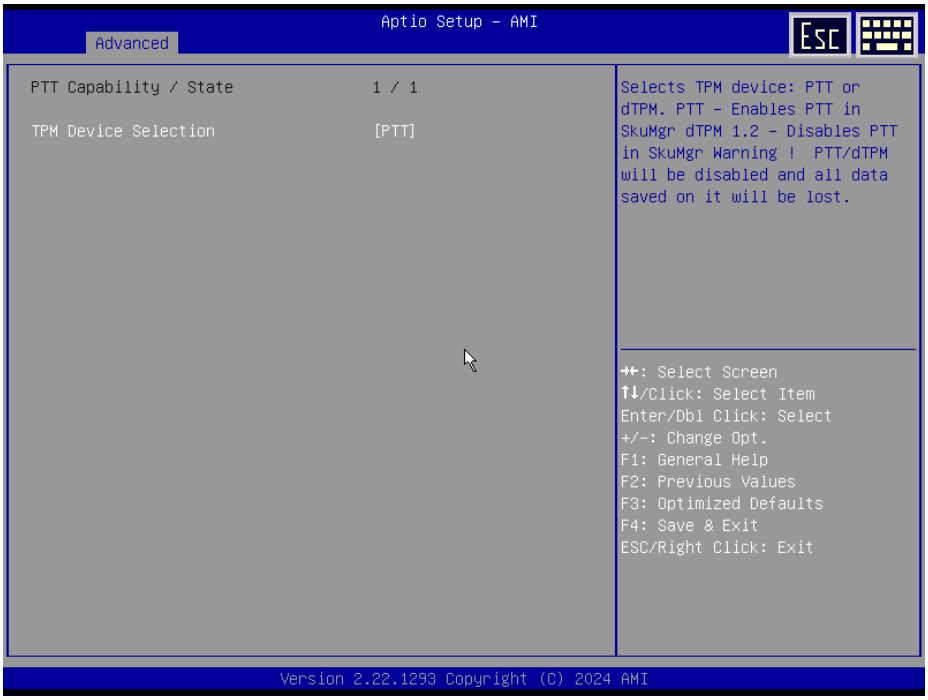
## Firmware Update Configuration




**Firmware Update Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Me FW Image Re-Flash | - Disabled (Default)<br>- Enabled | Enables/Disables ME FW Image Re-Flash function. |
| FW Update | - Disabled<br>- Enabled (Default) | Enables/Disables ME FW Update function. |

### PTT Configuration

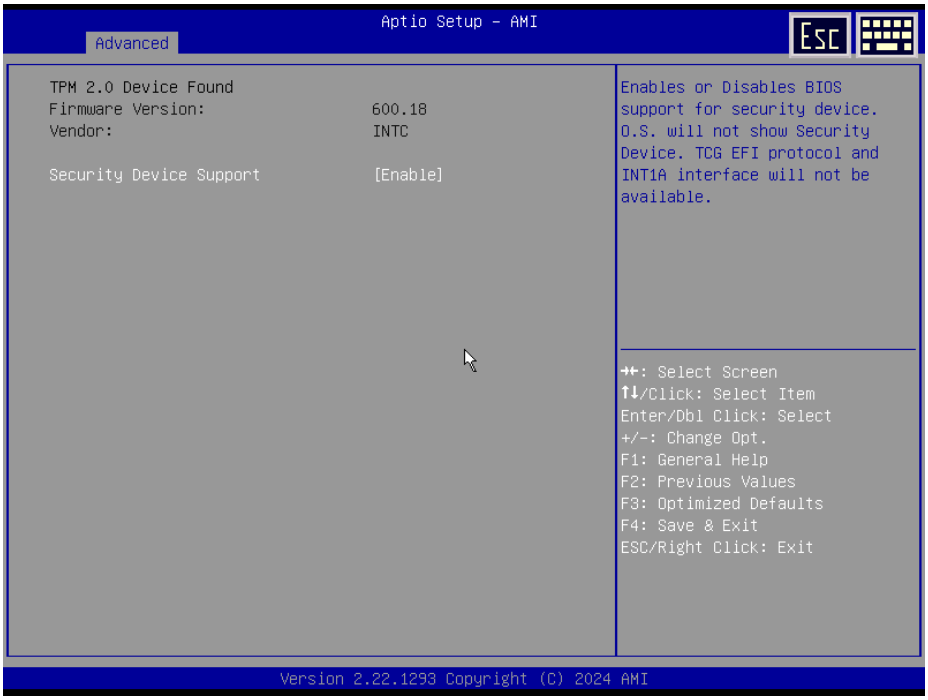



**PTT Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| TPM Device Selection | - PTT (Default)<br>- dTPM | Selects TPM device: PTT or dTPM. |

## 3.4.3 Trusted Computing

The Trusted Computing allows users to enable/disable BIOS support for security device. The operating system will now show Security Device. The TCG EFI protocol and INT1A interface will not be available.

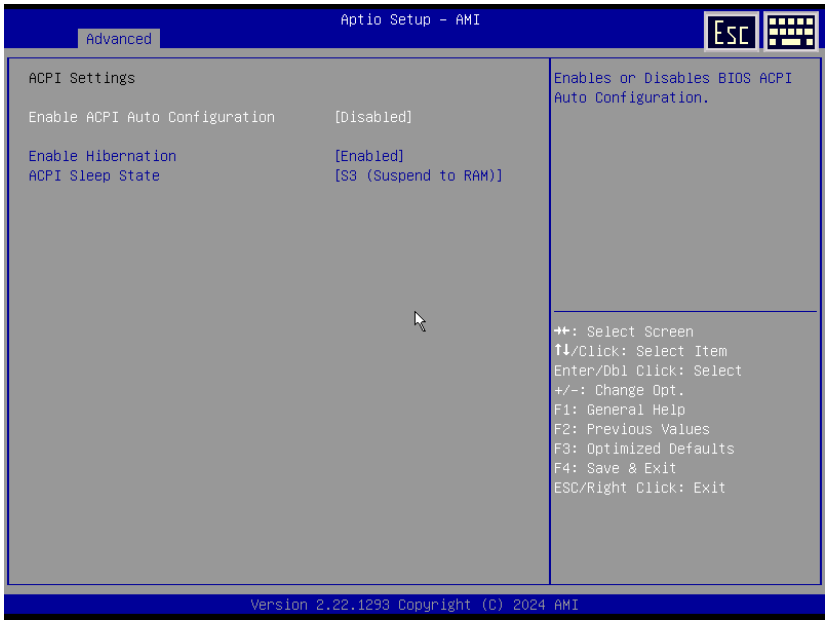



**Trusted Computing Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Firmware Version | No changeable options | Displays the Firmware Version. |
| Vendor | No changeable options | Displays the Vendor. |
| Security Device Support | - Disabled<br>- Enabled (Default) | 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. |

### 3.4.4 ACPI Setting

The **ACPI Settings** allows users to configure relevant ACPI (Advanced Configuration and Power Management Interface) settings, such as enabling ACPI Auto Configuration & Hibernation and ACPI Sleep State.




**ACPI Settings Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Enable ACPI Auto Configuration | - Disabled (Default)<br>- Enabled | Enables or Disables BIOS ACPI Auto Configuration |
| Enable Hibernation | - Disabled<br>- Enabled (Default) | Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS. |
| ACPI Sleep State | - Suspend Disabled<br>- S3 (Suspend to RAM) (Default) | Selects the highest ACPI sleep state the system will enter when the SUSPEND button is pressed. |

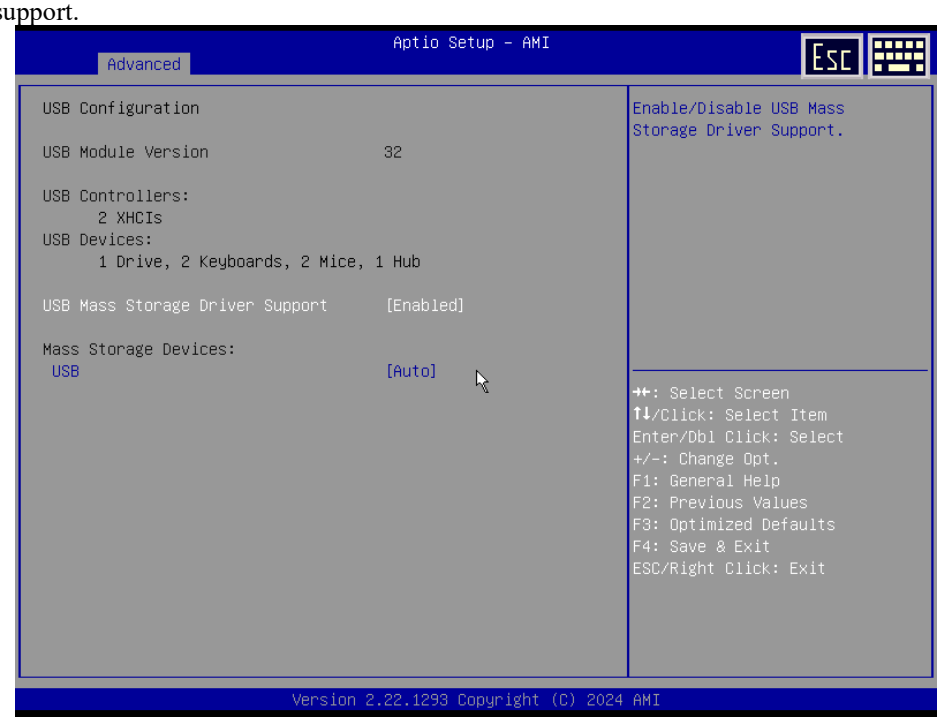
### 3.4.5 S5 RTC Wake Settings


S5 RTC Wake Settings Screen

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Wake system from S5 | - Disabled (Default)<br>- Fixed Time<br>- Dynamic Time | Enables or disables System wake on alarm event.<br>Selects FixedTime, system will wake on the hr::min::sec specified.<br>Selects DynamicTime , System will wake on the current time + Increase minute(s) |
| Wake up hour | Numeric (from 0 to 23) | The hour(s) of the specified wake up time. |
| Wake up minute | Numeric (from 0 to 59) | The minute (s) of the specified wake up time. |
| Wake up second | Numeric (from 0 to 59) | The second (s) of the specified wake up time. |
| Wake up minute increase | Numeric (from 1 to 5) | The increase minute(s) of the system wake up times.<br>System will wake on the current time + Increase minute(s) |

### 3.4.6 USB Configuration

The **USB Configuration** allows users to configure advanced USB settings such as USB mass storage driver support.

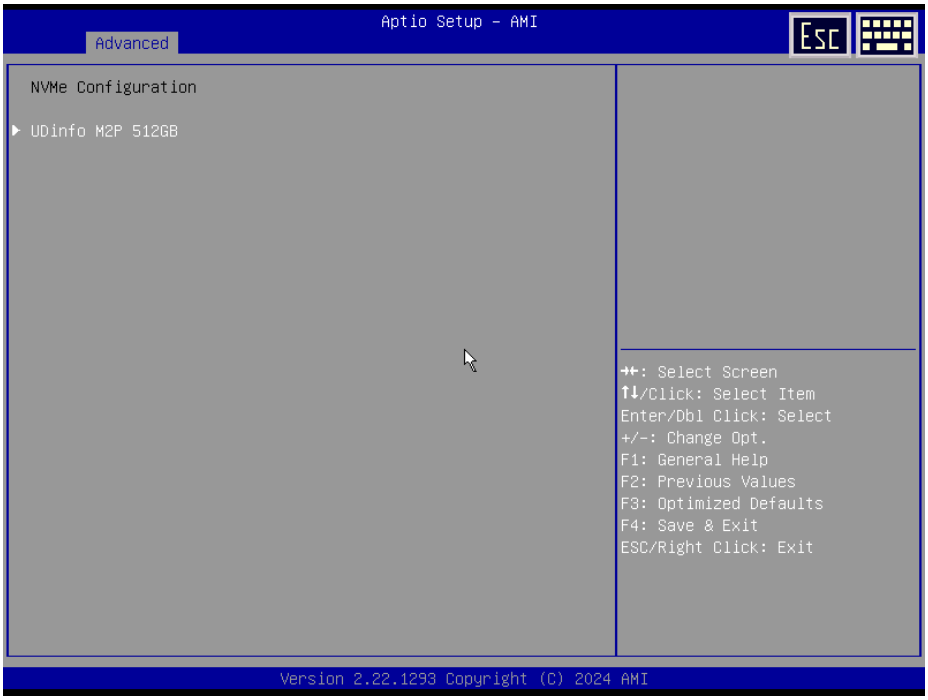



**USB Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| USB Module Version | No changeable options | Displays USB module version. |
| USB Controllers | No changeable options | Displays number and type of USB controllers (if any). |
| USB Devices | No changeable options | Displays number and type of connected USB devices (if any). |
| USB Mass Storage Driver Support | - Disabled<br>- Enabled (Default) | Enables/Disables USB Mass Storage Driver Support. |
| MASS STORAGE DEVICES: [drive(s)] | - Auto (Default)<br>- Floppy<br>- Forced FDD<br>- Hard Disk<br>- CD-ROM | AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CD-ROM', drives with no media will be emulated according to a drive type. |

### 3.4.7 NVMe Configuration

The **NVMe Configuration** allows users to view the information about NVMe Device.

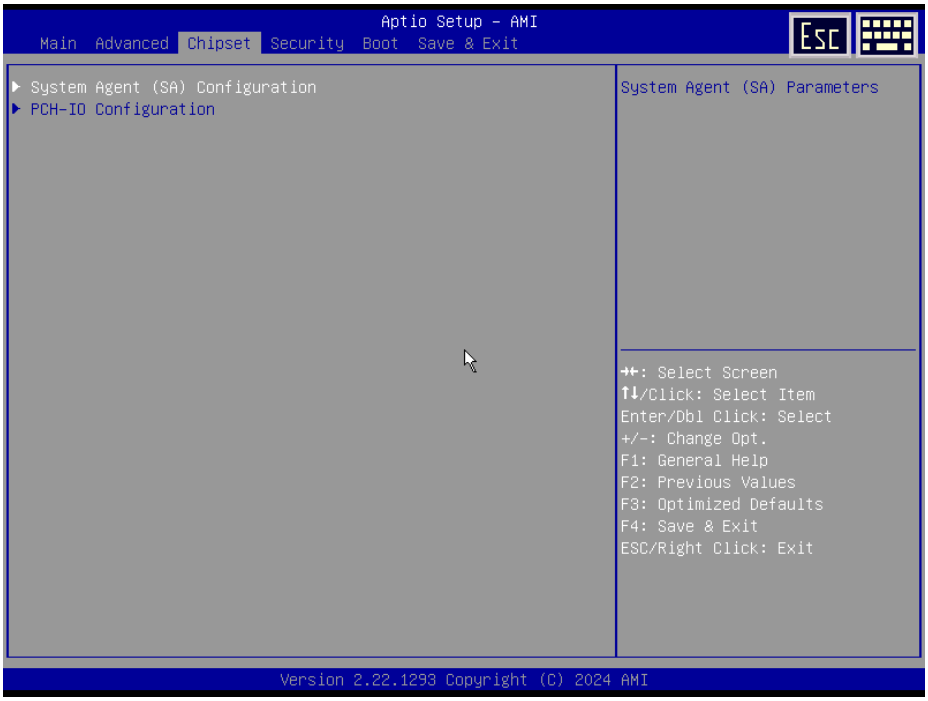



**NVMe Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| NVMe Configuration | No changeable options | Displays NVMe device. |

## 3.5 Chipset Settings

This menu allows user to configure advanced Chipset settings such as System Agent (SA) and PCH-IO configuration parameters.




**Chipset Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| System Agent (SA) Configuration | Sub-Menu | System Agent (SA) parameters. |
| PCH-IO Configuration | Sub-Menu | PCH-IO parameters. |

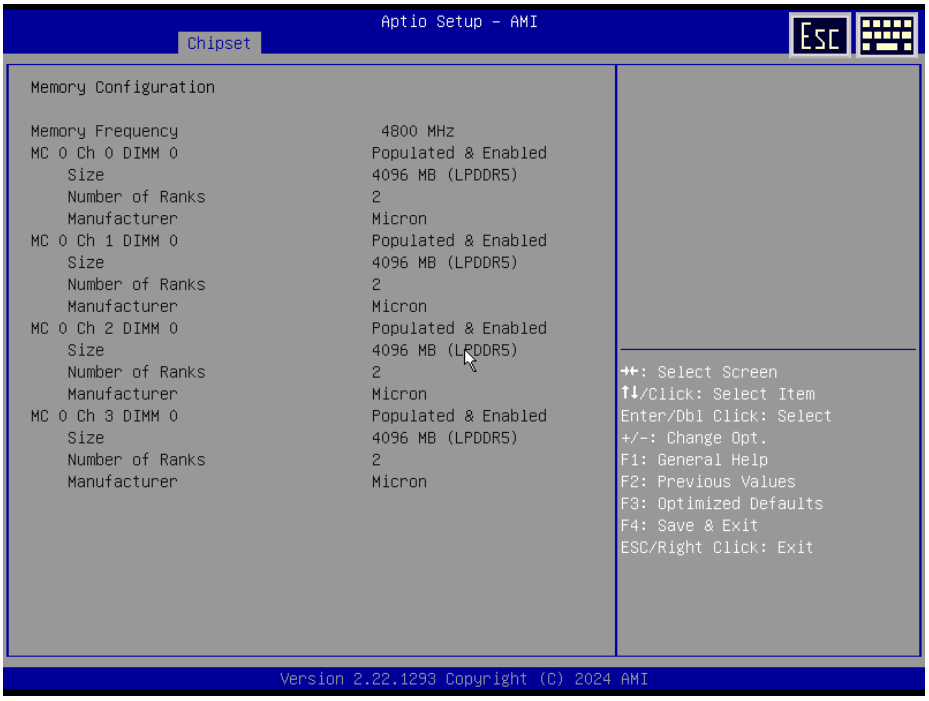
### 3.5.1 System Agent (SA) Configuration

The **System Agent (SA) Configuration** allows displaying the DRAM information on the platform.


**System Agent (SA) Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Memory Configuration | Sub-Menu | Memory Configuration. |
| VT-d | - Disabled<br>- Enabled (Default) | Enables or Disables VT-d function. |

### Memory Configuration

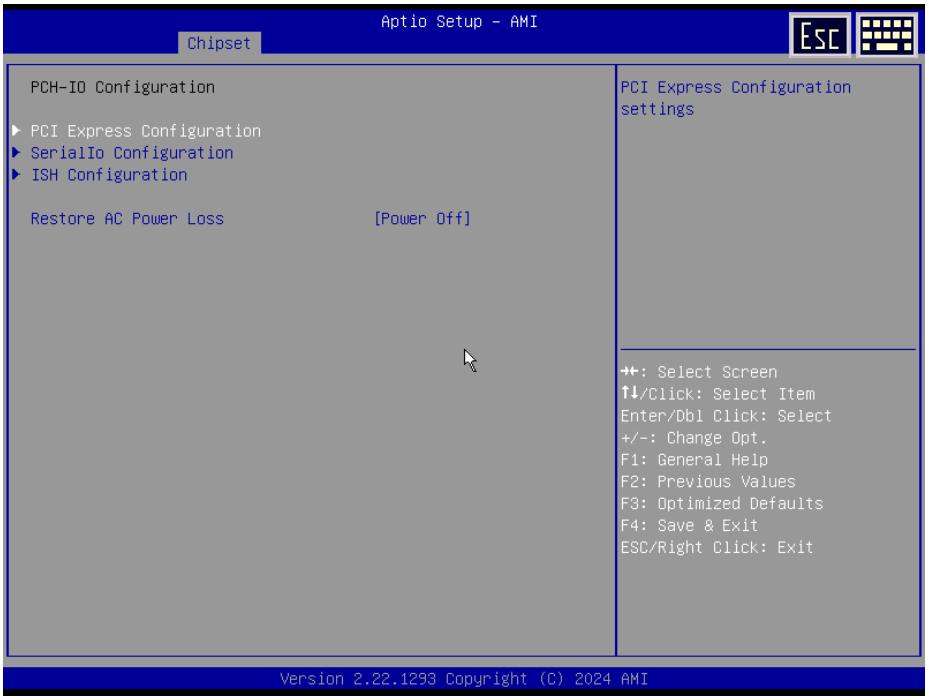



**Memory Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Memory Frequency | No changeable options | Displays the Frequency of Memory. |
| Controller 0 Channel 0 Slot 0 | No changeable options | Displays the Controller 0 Channel 0 Slot 0 Subtitle. |
| Size | No changeable options | Displays the size of MC0 Ch 0 DIMM 0. |
| Number of Ranks | No changeable options | Displays the Number of Ranks of MC0 Ch 0 DIMM 0. |
| Manufacturer | No changeable options | Displays the Manufacturer of MC0 Ch 0 DIMM 0 |

### 3.5.2 PCH-IO Configuration

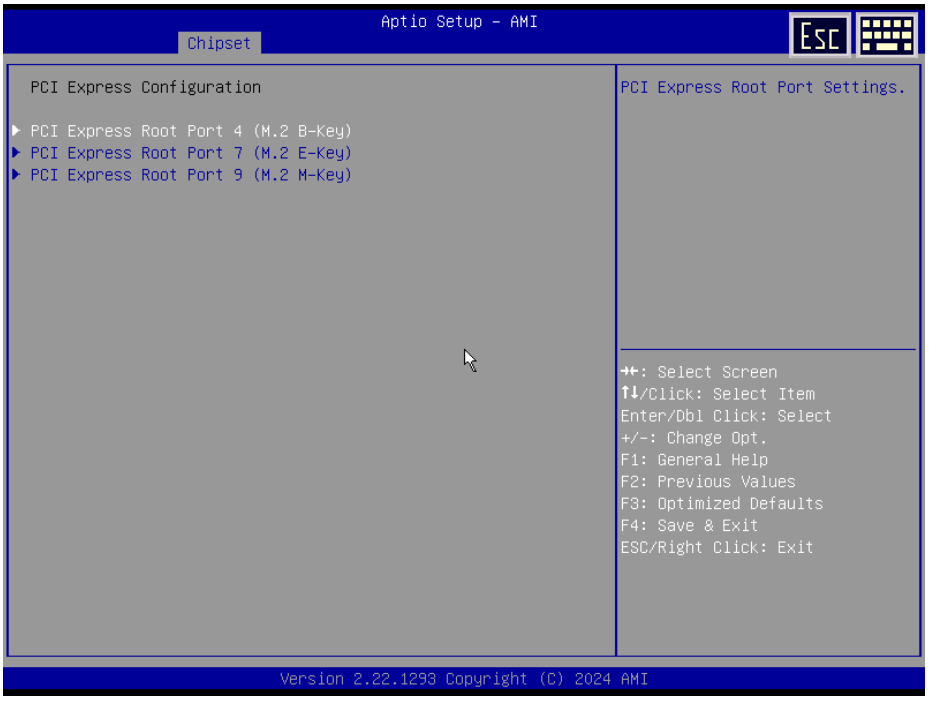
The **PCH-IO** Configuration allows users to set PCI Express configuration parameters, set Serial I/O Configuration and ISH Configuration and determine the power on/off state that the system will go to following a power failure (G3 state).




**PCH-IO Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| PCI Express Configuration | Sub-Menu | PCI Express Configuration settings. |
| SerialIo Configuration | Sub-Menu | Serial I/O Configuration settings. |
| ISH Configuration | Sub-Menu | Integrated Sensor Hub (ISH) Configuration settings. |
| Restore AC Power Loss | - Power On<br>- Power Off (Default) | Specifies what state to go to when power is re-applied after a power failure (G3 state). |

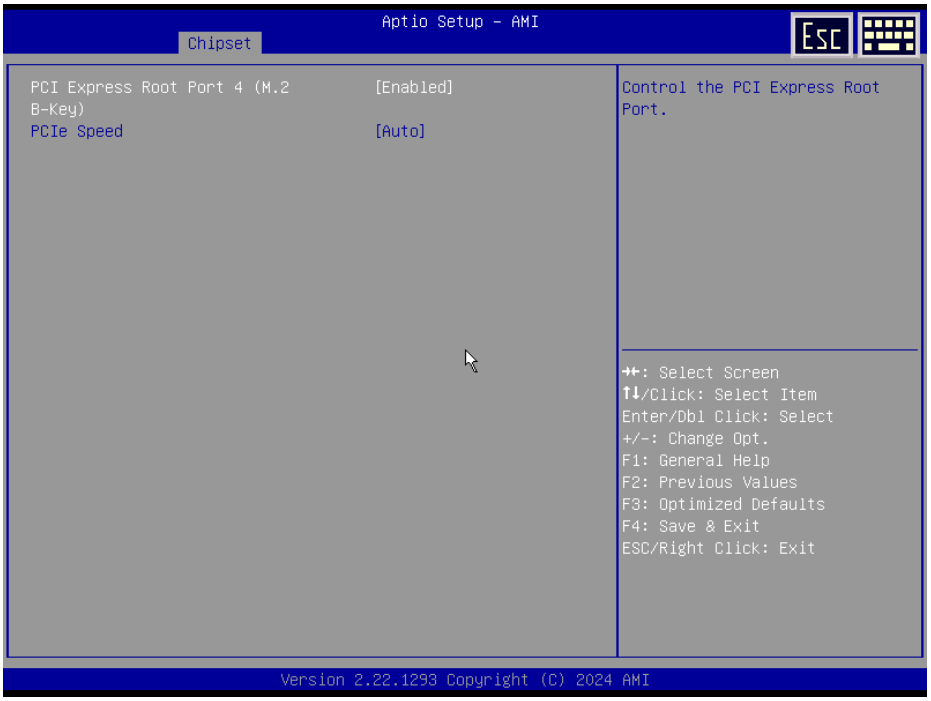
## PCI Express Configuration




**PCI Express Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| PCI Express Root Port 4 (M.2 B-Key) | Sub-Menu | PCI Express Root Port 4 (M.2 B-Key) Settings. |
| PCI Express Root Port 7 (M.2 E-Key) | Sub-Menu | PCI Express Root Port 7 (M.2 E-Key) Settings. |
| PCI Express Root Port 9 (M.2 M-Key) | Sub-Menu | PCI Express Root Port 9 (M.2 M-Key) Settings. |

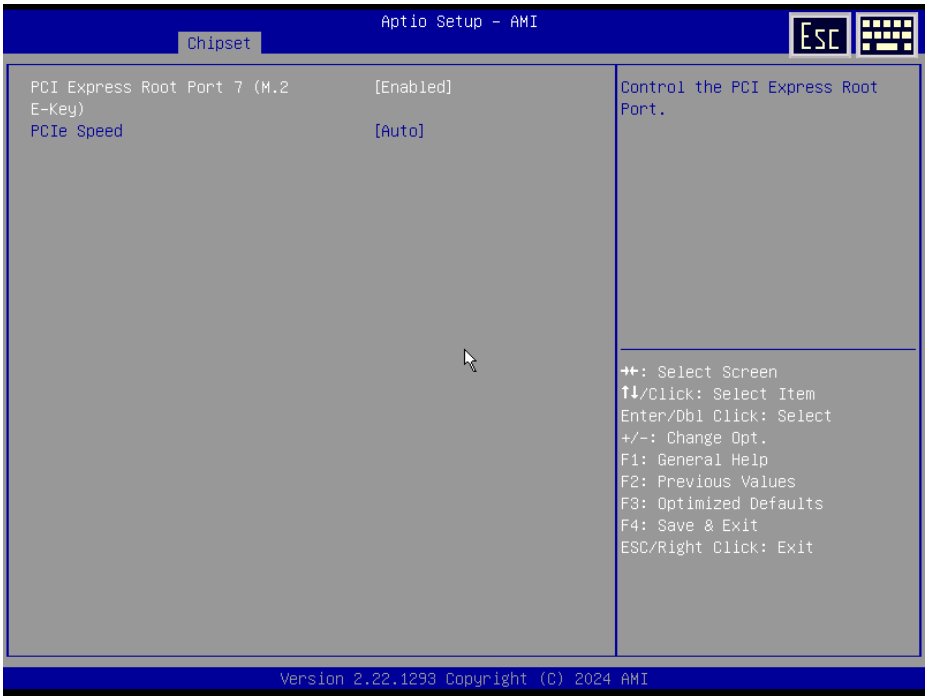
## PCI Express Root Port 4 (M.2 B-KEY)




**PCI Express Root Port 4 (M.2 B-KEY) Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| PCI Express Root Port 4 (M.2 B-Key) | - Disabled<br>- Enabled (Default) | Controls PCI Express Root Port. |
| PCIe Speed | - Auto (Default)<br>- Gen1<br>- Gen2<br>- Gen3 | Configures PCIe Speed. |

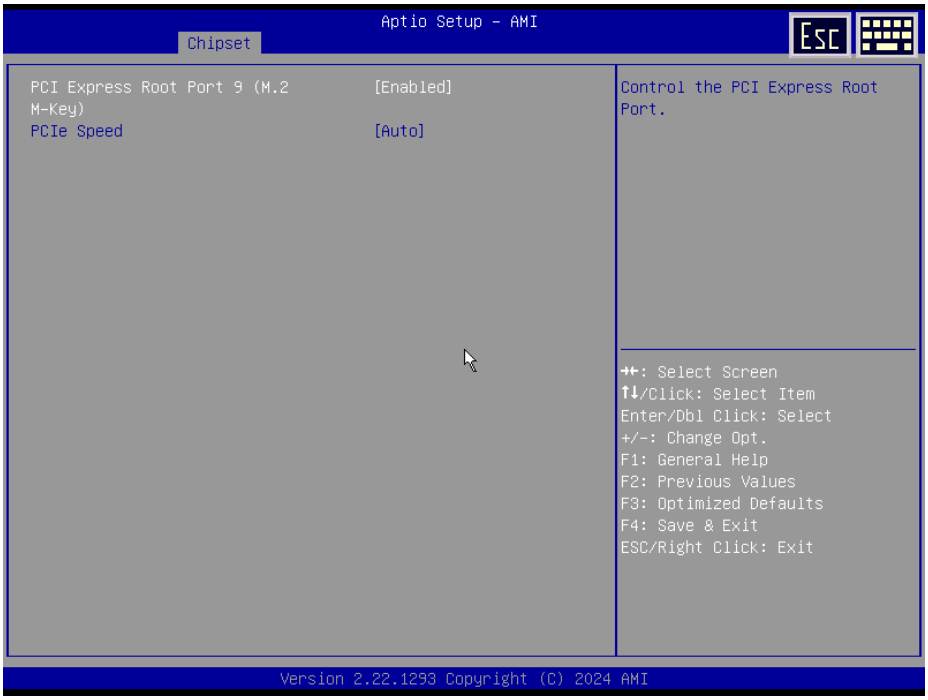
## PCI Express Root Port 7 (M.2 E-Key)




**PCI Express Root Port 7 (M.2 E-Key) Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| PCI Express Root Port 7 (M.2 E-Key) | - Disabled<br>- Enabled (Default) | Controls PCI Express Root Port. |
| PCIe Speed | - Auto (Default)<br>- Gen1<br>- Gen2<br>- Gen3 | Configures PCIe Speed. |

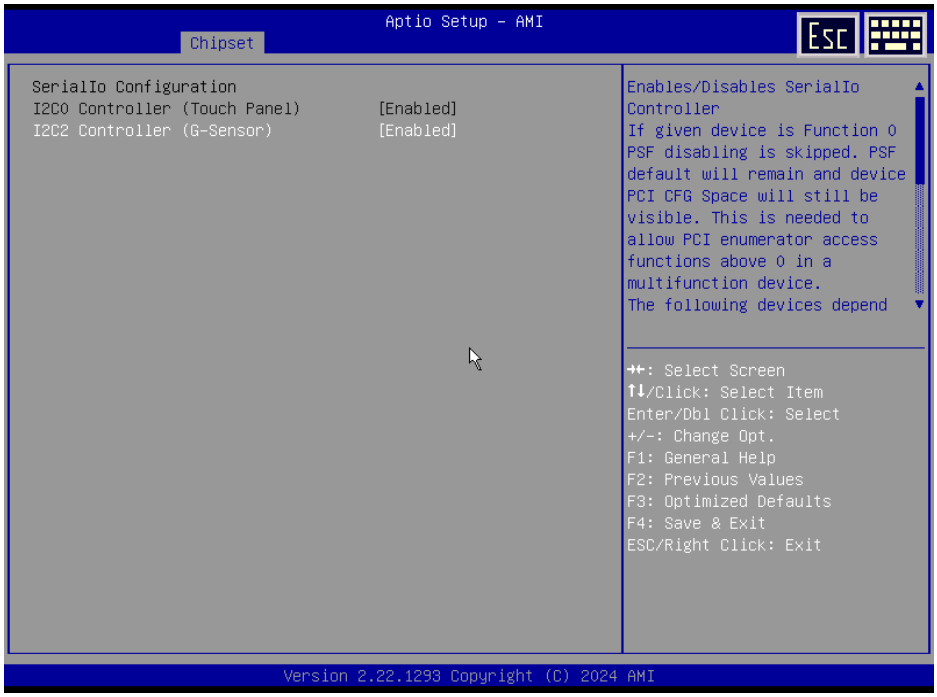
## PCI Express Root Port 9 (M.2 M-Key)




**PCI Express Root Port 9 (M.2 M-Key) Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| PCI Express Root Port 9 (M.2 M-Key) | - Disabled<br>- Enabled (Default) | Controls the PCI Express Root Port. |
| PCIe Speed | - Auto (Default)<br>- Gen1<br>- Gen2<br>- Gen3 | Configures PCIe Speed. |

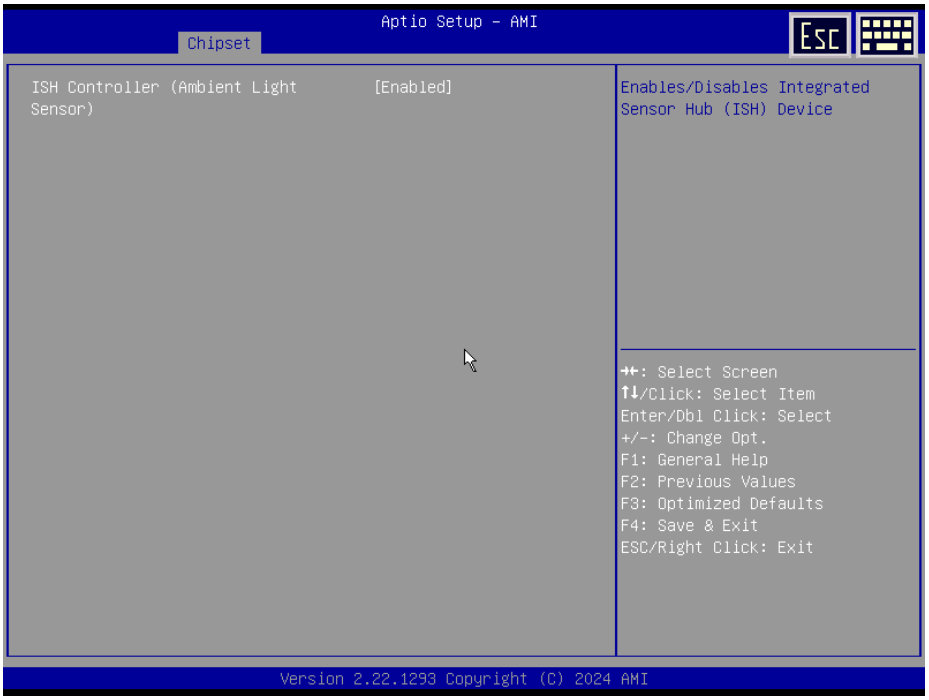
## Serial IO Configuration




**Serial IO Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| I2C0 Controller (Touch Panel) | - Disabled<br>- Enabled (Default) | Enables / Disables SerialIo I2C0 Controller (Touch Panel). |
| I2C2 Controller (G-Sensor) | - Disabled<br>- Enabled (Default) | Enables / Disables SerialIo I2C2 Controller (G-Sensor). |

## ISH Configuration




**ISH Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| ISH Controller<br>(Ambient Light Sensor) | - Disabled<br>- Enabled (Default) | Enables / Disables Integrated Sensor Hub (ISH) Device (Ambient Light Sensor) |

# 3.6 Security Settings

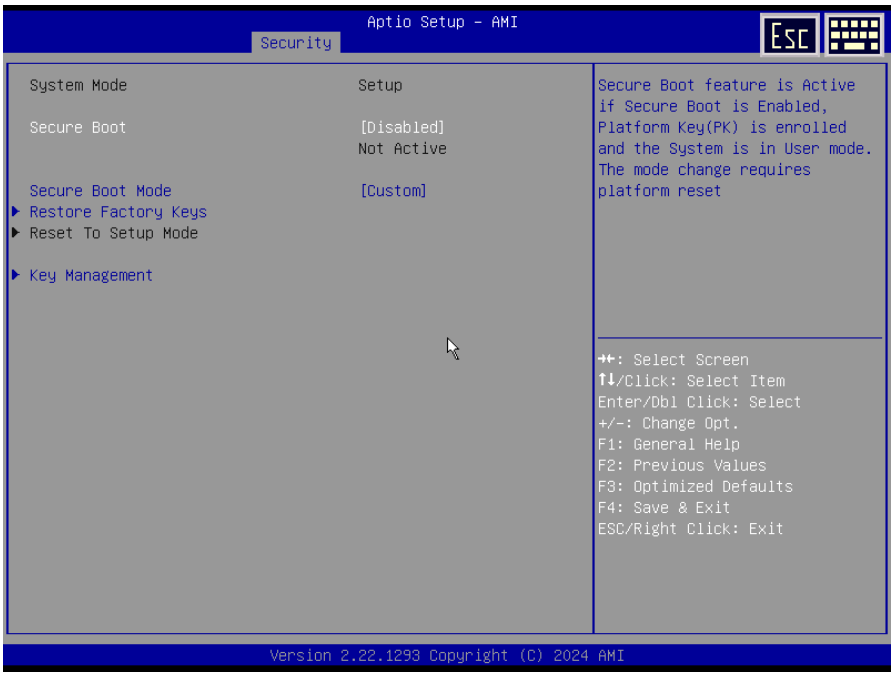
From the **Security** menu, you are allowed to configure or change the administrator password. You will be asked to enter the configured administrator password before you can access the Setup Utility. By setting an administrator password, you will prevent other users from changing your BIOS settings. You can configure an Administrator password and then configure a user password. Heed that a user password does not provide access to most of the features in the Setup utility.


**Security Menu Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Administrator Password | Password can be 3-20 alphanumeric characters. | Specifies the administrator password. |
| User Password | Password can be 3-20 alphanumeric characters. | Specifies the user password. |
| Secure Boot | Sub-Menu | Secure Boot configuration |

## 3.6.1 Security Boot

The **Secure Boot Configuration** allows users to enable/disable Secure Boot, set Secure Boot Mode, Restore Factory Keys and Key Management.




**Secure Boot Configuration Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| System Mode | No changeable options | Displays the system mode of secure boot. |
| Secure Boot | - Disabled (Default)<br>- Enabled | 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 | - Standard<br>- Custom (Default) | 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 |

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Restore Factory Key | No changeable options | Force System to User Mode. Install factory default Secure Boot key databases |
| Reset To Setup Mode | No changeable options | Delete all Secure Boot key databases from NVRAM |
| Key Management | Sub-Menu | PCI Express Configuration settings. |

## Key Management


**Key Management Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Factory Key Provision | - Disabled (Default)<br>- Enabled | Installs factory default Secure Boot keys after the platform reset and while the System is in Setup mode |
| Restore Factory Key | No changeable options | Forces System to User Mode.<br>Installs factory default Secure Boot key databases |

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Reset To Setup Mode | No changeable options | Deletes all Secure Boot key databases from NVRAM |
| Enroll Efi Image | No changeable options | Allows Efi image to run in Secure Boot mode.<br>Enrolls SHA256 Hash certificate of a PE image into Authorized Signature Database (db) |
| Export Secure Boot variables | No changeable options | Save NVRAM content of Secure Boot variable to a file |
| Platform Key (PK) | - Details<br>- Export<br>- Update<br>- Append<br>- Delete | Enrolls Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,Modified,Mixed |
| Key Exchange Keys (KEK) | - Details<br>- Export<br>- Update<br>- Append<br>- Delete | Enrolls Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,Modified,Mixed |
| Authorized Signatures (db) | - Details<br>- Export<br>- Update<br>- Append<br>- Delete | Enrolls Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,Modified,Mixed |

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Forbidden \| Signatures(dbx) | - Details<br>- Export<br>- Update<br>- Append<br>- Delete | Enrolls Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,Modified,Mixed |
| Authorized TimeStamps(dbt) | - Details<br>- Export<br>- Update<br>- Append<br>- Delete | Enrolls Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,Modified,Mixed |
| OsRecovery Signatures(dbr) | - Details<br>- Export<br>- Update<br>- Append<br>- Delete | Enrolls Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,Modified,Mixed |

# 3.7 Boot Settings

This menu provides control items for system boot configuration such as setting setup prompt timeout, enabling/disabling quiet boot and fast boot, selecting the boot sequence from the available device(s) and BBS option priorities as well as enabling / disabling Battery Shipping Mode.


**Boot Menu Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Setup Prompt Timeout | Numeric<br>(from 1 to 65535) | Number of seconds to wait for setup activation key. |
| Bootup NumLock State | - On (Default)<br>- Off | Specifies the power-on state of the NumLock Key. |
| Quiet Boot | - Disabled<br>- Enabled (Default) | Enables or Disables Quiet Boot options. |
| Fast Boot | - Disabled (Default)<br>- Enabled | Enables or Disables Fast Boot options. |

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Screen Rotation Policy | - Normal<br>- Right Rotation (Default)<br>- Left Rotation<br>- Reversion | Controls Screen display direction. |
| Boot Option #1~#n | - [Drive(s)]<br>- Disabled | Sets the system boot order. |
| Screen Rotation Policy | - Normal<br>- Right Rotation(Default)<br>- Left Rotation<br>- Reversion | Controls Screen display direction. |
| Battery Shipping Mode | - Disabled (Default)<br>- Enabled | Enabling this feature will make the system automatically power off at next boot and place it in a low-power state which prolongs battery life during shipment and while on the shelf.<br>Notes: Please remove all external power sources (AC & PD adaptor) before the system enters into shipping mode.<br>User needs to put the system back into the charging base for disabling shipping mode. |

# 3.8 Save & Exit Settings

The **Save & Exit** allows users to save or discard changed BIOS settings as well as load factory default settings.

**Save Changed BIOS Settings**

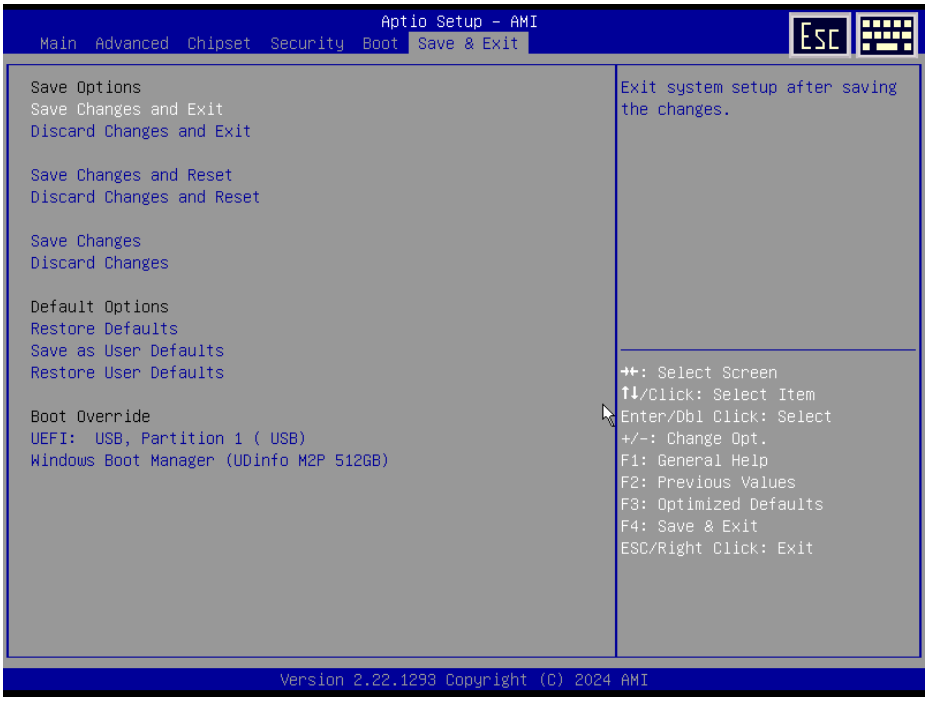
To save and validate the changed BIOS settings, select **Save Changes** from the **Save & Exit** menu to validate the changes and then exit the system. Select **Save Changes and Reset** to validate the changed BIOS settings and then restart the system

**Discard Changed BIOS Settings**

To cancel the BIOS settings you have previously configured, select **Discard Changes and Exit** from this menu, or simply press **Esc** to exit the BIOS setup. You can also select **Discard Changes and Reset** to reset system setup without saving any changes.

**Load User Defaults**

You may simply press **F3** at any time to load the **Optimized Values** which resets all BIOS settings to the factory defaults.




**Save & Exit Menu Screen**

| BIOS Setting | Options | Description/Purpose |
|---|---|---|
| Save Changes and Exit | No changeable options | Exits and saves the changes in NVRAM. |
| Discard Changes and Exit | No changeable options | Resets without saving any changes made in BIOS settings. |
| Save Changes and Reset | No changeable options | Saves the changes in NVRAM and resets. |
| Discard Changes and Reset | No changeable options | Reset system setup without saving any changes. |
| Save Changes | No changeable options | Saves Changes done so far to any of the setup options. |
| Discard Changes | No changeable options | Discards Changes done so far to any of the setup options. |
| Restore Defaults | No changeable options | Loads the optimized defaults for BIOS settings. |
| Save as User Defaults | No changeable options | Saves the changes done so far as User Defaults. |
| Restore User Defaults | No changeable options | Restores the User Defaults to all the setup options. |
| Boot Override | - [Drive(s)] | Forces to boot from selected [drive(s)]. |

# Chapter 4 Installation of Drivers

Enclosed with the ART-810 Series package is our driver utilities contained in a DVD-ROM disk. Refer to the following table for driver locations:

**Windows 10 IoT Enterprise 64Bit**

| Filename (Assume that DVD- ROM drive is D :) | Purpose |
|---|---|
| D:\Driver\Platform\win10\01_Main Chip | Intel(R) Chipset Device Software Installation Utility |
| D:\Driver\Platform\win10\02_Graphics | Intel Graphics Driver installation |
| D:\Driver\Platform\win10\03_CSME | Intel(R) Management Engine Firmware |
| D:\Driver\Platform\win10\04_Sound Codec | Realtek High Definition Audio driver installation |
| D:\Driver\Platform\win10\05_Serial IO | Intel(R) Serial IO Driver |
| D:\Driver\Platform\win10\06_HID Event Filter Driver | Intel(R) HID Event Filter Driver |
| D:\Driver\Platform\win10\07_ISH | Intel(R) Integrated Sensor Solution |
| D:\Driver\Platform\win10\08_G-Sensor | G-Sensor Driver |

**Note:** After the OS installation is completed, the driver utilities will also be installed at the same time.

**Windows 11 IoT Enterprise 64Bit**

| Filename (Assume that DVD- ROM drive is D :) | Purpose |
|---|---|
| D:\Driver\Platform\win11\01_Chipset | Intel(R) Chipset Device Software Installation Utility |
| D:\Driver\Platform\win11\02_Graphics | Intel Graphics Driver installation |
| D:\Driver\Platform\win11\03_CSME | Intel(R) Management Engine Firmware |
| D:\Driver\Platform\win11\04_Sound Codec | Realtek High Definition Audio driver installation |
| D:\Driver\Platform\win11\05_Serial IO | Intel(R) Serial IO Driver |
| D:\Driver\Platform\win11\06_HID Event Filter | Intel(R) HID Event Filter Driver |
| D:\Driver\Platform\win11\07_ISH | Intel(R) Integrated Sensor Solution |
| D:\Driver\Platform\win11\08_G-Sensor | G-Sensor Driver |

**Note:** After the OS installation is completed, the driver utilities will also be installed at the same time.

## 4.1 Intel Chipset

### 4.1.1 Introduction

The Intel® Chipset Software Installation Utility installs the Windows *.INF files to the target system. These files outline to the operating system how to configure the Intel chipset components in order to ensure that the following functions work properly:

- Core PCI and ISAPNP Services
- PCIe Support
- SATA Storage Support
- USB Support
- Identification of Intel® Chipset Components in the Device Manager

### 4.1.2 Intel® Chipset Software Installation Utility

The utility pack is to be installed only for Windows® 10 / Windows® 11 series, and it should be installed immediately after the OS installation is finished. Please follow the steps below:

1. Connect the USB DVD-ROM device to ART-810 and insert the driver disk.
2. Select your OS platform **win10** or **win11**.
3. Enter the **Main Chip** folder where the Chipset driver is located.
4. Click **SetupChipset.exe** driver installation file for driver installation.
5. Follow the on-screen instructions to install the driver.
6. Once the installation is completed, shut down the system and restart ART-810 for the changes to take effect.

## 4.2 Intel® Graphics Driver Utility

To install the Graphics driver utility, follow the steps below:

1. Connect the USB DVD-ROM device to ART-810 and insert the driver disk.
2. Select your OS platform **win10** or **win11**.
3. Enter the **Graphics** folder where the driver is located.
4. Click **Installer.exe** file for driver installation.
5. Follow the on-screen instructions to complete the installation.
6. Once the installation is completed, shut down the system and restart ART-810 for the changes to take effect.

## 4.3 Intel® Management Engine Firmware Driver Utility

To install the Intel® Management Engine Firmware Driver, follow the steps below:

1. Connect the USB DVD-ROM device to ART-810 and insert the driver disk.
2. Select your OS platform **win10** or **win11**.
3. Enter the **CSME** folder where the driver is located.
4. Click **SetupME.exe** file for driver installation.
5. Follow the on-screen instructions to complete the installation.
6. Once the installation is completed, shut down the system and restart ART-810 for the changes to take effect.

## 4.4 Sound Codec Driver Utility

The sound function enhanced in this system is fully compatible with Windows® 10 / Windows® 11 series.

To install the Sound Codec Driver, follow the steps below:

1. Connect the USB DVD-ROM device to ART-810 and insert the driver disk.
2. Select your OS platform **win10** or **win11**.
3. Open the **Sound Codec** folder where the driver is located.
4. Click **Setup.exe** file for driver installation.
5. Follow the on-screen instructions to complete the installation.
6. Once the installation is completed, shut down the system and restart ART-810 for the changes to take effect.

## 4.5 Serial I/O Driver Utility

To install the Serial I/O Driver, follow the steps below:

1. Connect the USB DVD-ROM device to ART-810 and insert the driver disk.
2. Select your OS platform **win10** or **win11**.
3. Open the **Serial IO** folder where the driver is located.
4. Click the **SetupSerialIO.exe** file for driver installation.
5. Follow the on-screen instructions to complete the installation.
6. Once the installation is completed, shut down the system and restart ART-810 for the changes to take effect.

## 4.6 HID Event Filter Driver Utility (For Windows 10 Only)

To install the HID Event Filter Driver, follow the steps below:

1. Connect the USB DVD-ROM device to ART-810 and insert the driver disk.
2. Select your OS platform **win10**.
3. Open the **HID Event Filter** folder where the driver is located.
4. Click **Setup.exe** file for driver installation.
5. Follow the on-screen instructions to complete the installation.
6. Once the installation is completed, shut down the system and restart ART-810 for the changes to take effect.

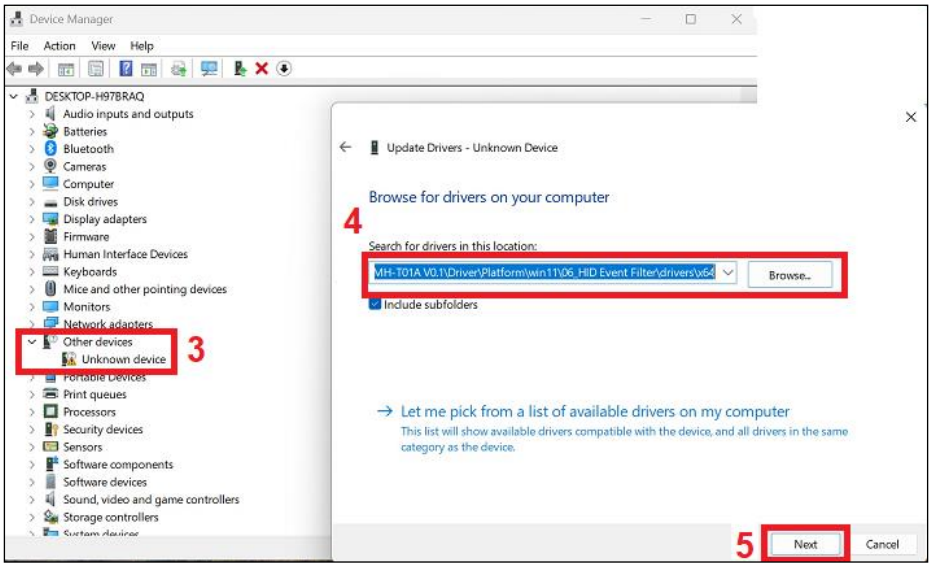
## 4.7 HID Event Filter Driver Utility (For Windows 11 Only)

To install the HID Event Filter Driver on Windows® 11, follow the steps below:

*1* Go to **Computer Management** of your PC

*2* Select **Device Manager**.

*3* Select **Other devices > Unknown device**.




*4* Enter "**D:\Driver\Platform\win11\06_HID Event Filter**" in the entry box to browse for HID driver.

*5* Click **"Next"** to continue and follow the on-screen instructions to install the driver.

*6* Once the installation is completed, shut down and restart ART-810 for the changes to take effect.

**For more details on the installation procedure, refer to the README.pdf file that you can find on HID Driver Utility.**

## 4.8 Integrated Sensor Solution Driver Utility

To install the Integrated Sensor Solution Driver, follow the steps below:

1. Connect the USB DVD-ROM device to ART-810 and insert the driver disk.
2. Select your OS platform **win10** or **win11**.
3. Open the **ISH** folder where the driver is located.
4. Click **SetupISS.exe** file for driver installation.
5. Follow the on-screen instructions to complete the installation.
6. Once the installation is completed, shut down the system and restart ART-810 for the changes to take effect.

## 4.9 G-Sensor Driver Utility

To install the G-Sensor Driver, follow the steps below:

1. Connect the USB DVD-ROM device to ART-810 and insert the driver disk.
2. Select your OS platform **win10** or **win11**.
3. Open the **G-Sensor** folder where the driver is located.
4. Click **STAccelGyro_v1.2.3.0.exe** file for driver installation.
5. Follow the on-screen instructions to complete the installation.
6. Once the installation is completed, shut down the system and restart ART-810 for the changes to take effect.

# 4.10 Using P Utility

Application Information

Version

**P Camera:** 0.6.0.5 Update Date: 2025/0610

**P Control Board:** 0.9.3.5 Update Date: 2025/06/10

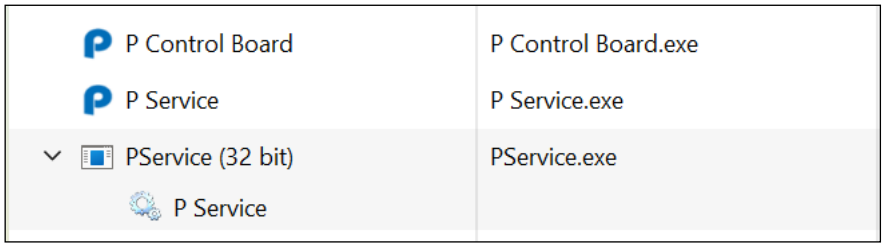
**P Service:** 0.9.3.5 Update Date: 2025/06/10

**P Utility** includes 3 Software & 1 Service Software

1. **P Service** (Background Software & Service Software): Utility Background Service System. Include P Service (P logo) running on the background and PService (No icon) guard service to make sure P Service (P logo) starts up properly and runs smoothly.
2. **P Control Board:** User Control Interface for System Settings, Button Pool, Q-Start, Battery Information, Notification. Some of the functions need to be used with P Service.
3. **P Camera:** Camera Software. Hardware Button functions need to be used with P Control Board.

## P Server

**P Server** is a program running on the background when the tablet starts up. You can find the program execution information at Windows Task Manager Background Processes.

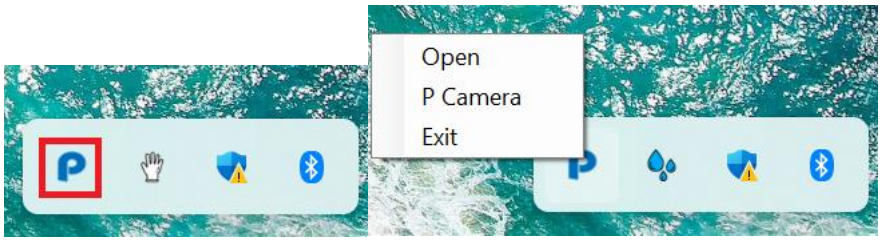



**P Service (P logo):** Used with P Control Board.

**P Service (No icon):** Guard Service Protect P Service (P logo).

# 4.11 P Control Board

**P Control Board** is a control center app that will start in the background when the system starts up. You can find the program icon from the windows taskbar. (Red Square)




**Picture 1** **Picture 2**

You can use one of the following two methods to launch the P Control Board application program.

**Method 1:** Left-click the mouse on the **P** logo or use your finger to touch the logo, and the software UI Main Page opens quickly. < See Section 4.12.1 Main Page>.

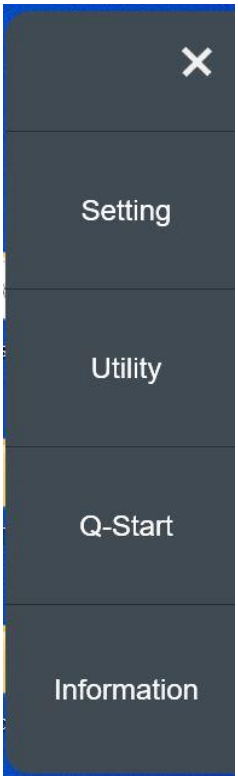
**Method 2:** Right-click the mouse on the **P** logo or use your finger to long press on the logo to bring up the P Control Board function menu (See Picture 2) that includes the following menu items:

- **Open:** Software UI Main Page displays. <See Section 4.12.1 Main Page>.
- **P Camera:** Open Camera Software.
- **Exit:** Used only when the program is running abnormally. Make sure the program is always running in the background. If you exit the program, you need to turn it on manually.

Next we will explain all the functions of all pages in order.
<Note> Some of the functions can be used properly only after **P Service** has been installed successfully.

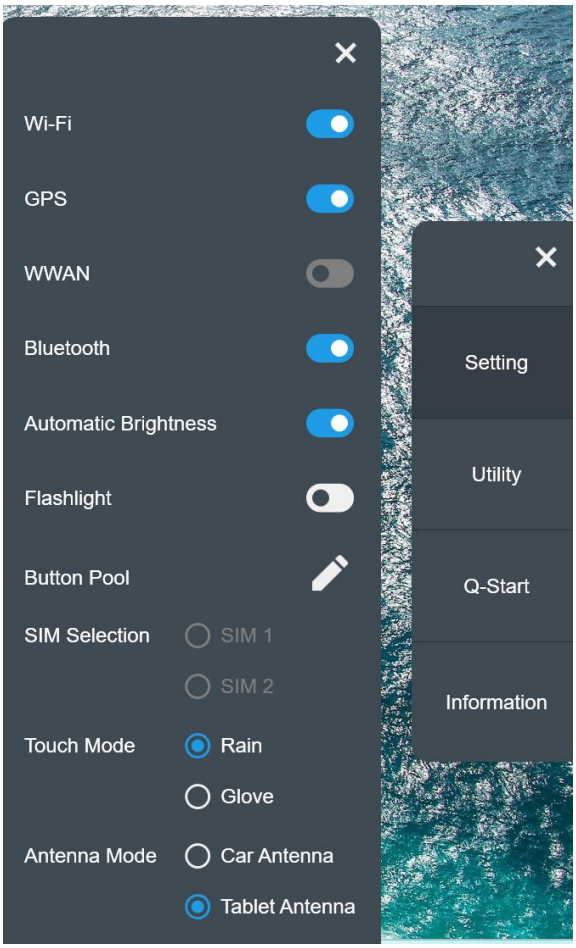
### 4.11.1 Main Page

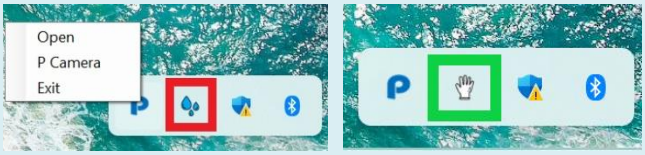
**P Control Board** consists of 4 main functions: Setting, Utility, Q-Start, Information.



### 4.11.2 Setting Page

The main functions of the **Setting** page include adjusting system settings, change button pool (tablet front button functions), Tablet unique functions Setting.



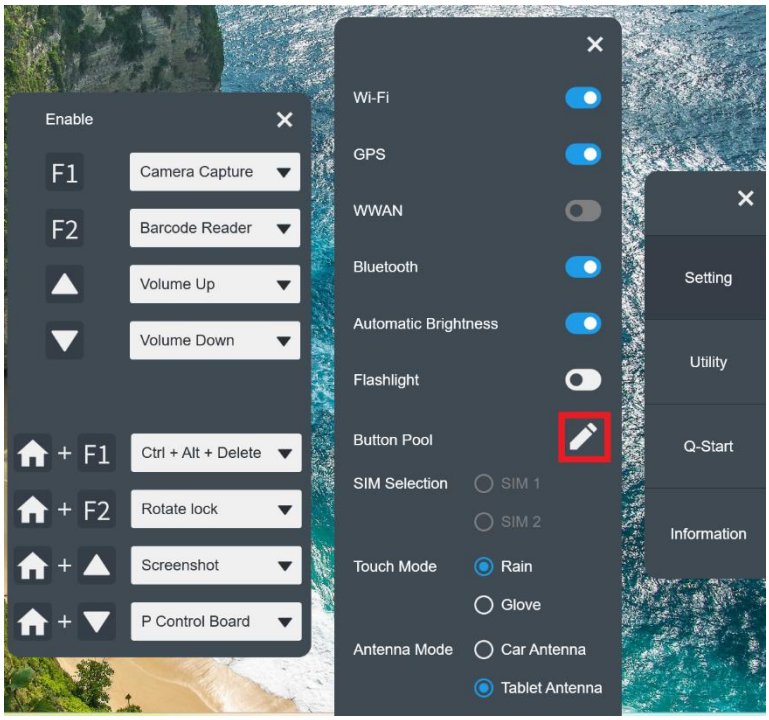
| Function Item | Description |
|---|---|
| Wi-Fi | Turn On or Off Wi-Fi function. |
| GPS | Turn On or Off System Location setting & 4G/5G Modem GNSS switch (Note 1). |
| WWAN | Turn On or Off Mobile broad band Switch. |
| Bluetooth | Turn On or Off Bluetooth function. |
| Automatic Brightness | Turn On or Off Screen auto brightness adjustment function. |
| Flashlight | Turn On or Off Tablet back camera Flashlight. |
| Button Pool | Configures the 5 programmable function keys on the front of your tablet.<See Section 4.12.3 Button Pool Page.> |
| SIM selection | Switch between SIM card slots (See Note 1). |
| Touch mode | Change Touch Screen Mode.<br>➢ **Rain ->** The Stylus cannot be used. (Red Square)<br>➢ **Glove->** The Stylus can be used. (Green Square)<br>  <br>You can see the **Touch mode** icon on the Windows taskbar. Check the mode or touch the icon to switch between Rain and Glove modes. |
| Antenna mode | Switch Internal antenna (Tablet) or external antenna (Car). |

**Note 1:** The GPS function can only be used if a compatible mobile broad band modem module is installed.

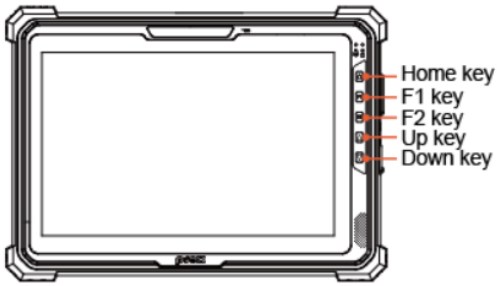
Compatible modules：Quectel 4G EM060K-GL, Quectel 5G RM520N, Sierra 4G EM7421.

### 4.11.3 Button Pool (Function Key) Page

The tablet is equipped of 5 programmable function keys (Home key, F1 key, F2 key, Up key and Down key) and specific combo keys. Before the system starts up into OS (BIOS mode), the functions of the buttons are fixed. Please see the default function table on Page 4-19. After the system enters into OS system, the button functions can be configured in Button Pool. (Red Square)




Please see the locations of the 5 programmable function keys located on the right side of the tablet.

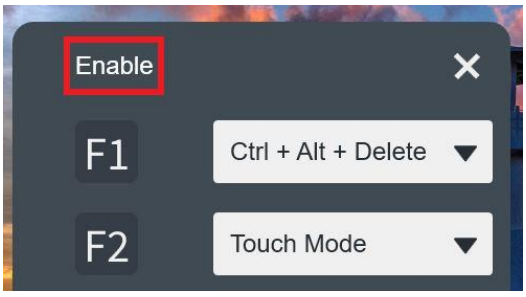


**Default function table:**

| Key\System State | BIOS mode (Before into OS) | After into OS |
|---|---|---|
| Home key | Keyboard ESC key | Windows Start Menu |
| F1 key | Keyboard right arrow key | Camera Capture (Note1) |
| F2 key | Keyboard left arrow key | Barcode Reader (Note1) |
| Up key | Keyboard up arrow key | Volume Up (Note1) |
| Down key | Keyboard down arrow key | Volume Down (Note1) |
| Home + F1 keys | Keyboard Enter key | Ctrl + Alt +Delete (Note1) |
| Home + F2 keys | N/A | Rotate lock (Note1) |
| Home + Up keys | N/A | Screenshot (Note1) |
| Home + Down keys | N/A | P Control Board (Note1) |

(Note1) Adjust functions on Button Pool page.

(Note2) Install **P Service** first before you can use the Button Pool functions properly. (continued on the next page)



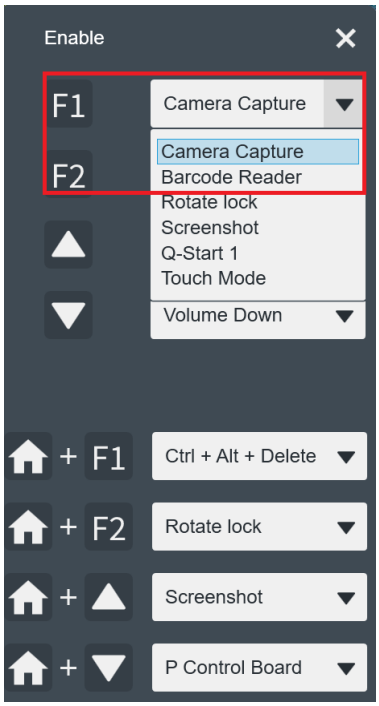

Button Pool function can be enabled/disabled at BIOS Setup menu.
(Specific BIOS version required)
The status will be displayed at the top of the page. (Red Square)
(Control Board Version 0.7.12.5 & after)

### Configuring F1, F2 Key Shortcuts

You can customize **F1** / **F2** function key shortcut by assigning it to a specific function from the function drop-down list. Follow the instructions below:

1. Go to **P Control Board > Setting** page and click the **Button Pool** icon as shown below:


The programmable function keys configuration page shown appears. You are allowed to select and assign a specific function from F1 and F2 function drop-down lists.

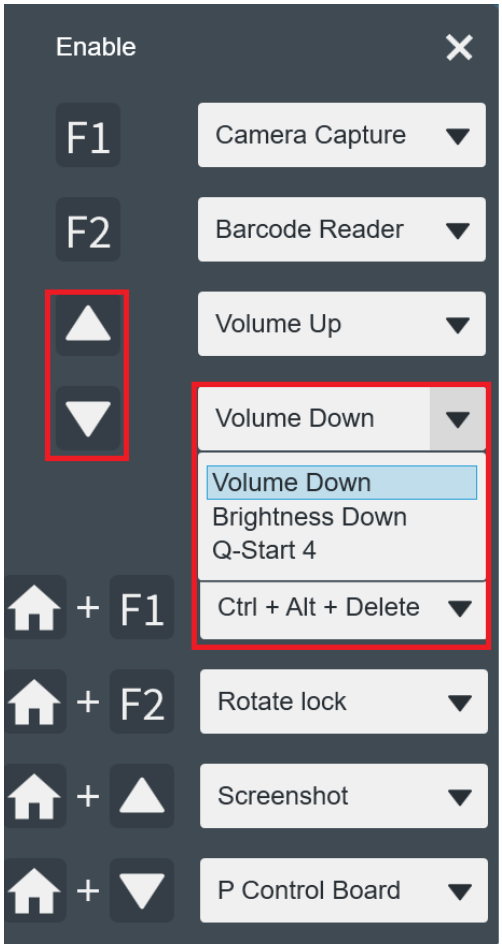



The functions available for F1 & F2 key shortcuts selections are listed below:

| Function | Description |
|---|---|
| Camera Capture | Open P Camera and capture pictures.<br>(You need to install **P Camera** first). |

| | |
|---|---|
| Barcode Reader | Optional Tablet Accessories. Press to scan barcode reader. |
| Ctrl+Alt+Delete | Bring up Windows Security. |
| Rotate Lock | Control Screen Rotate lock. |
| Screenshot | Screenshot into clipboard. |
| Q-Start | Program shortcut key (Please see section 4.12.5 Q-Start Page). |
| Touch mode | Adjust Touch Screen mode, rain mode or glove mode.<See Section 4.12.2 Setting page on page 4-16.> |

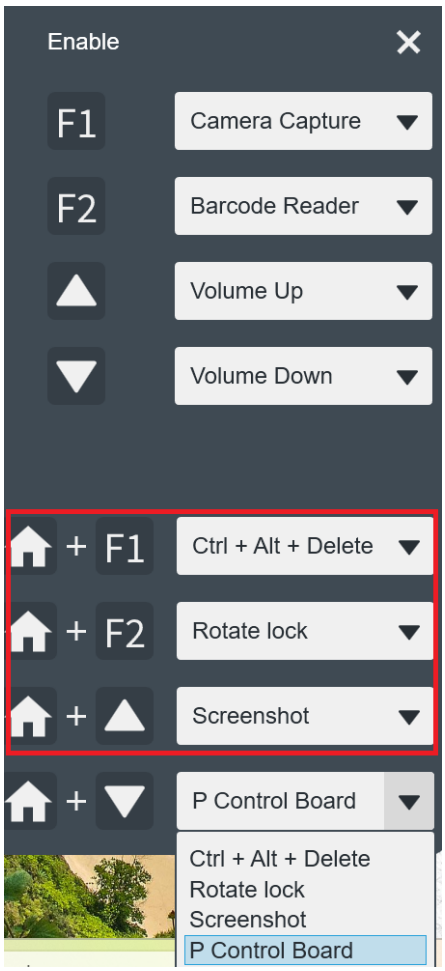
**Configuring Up Key and Down Key Shortcuts:**




You can customize **Up / Down** function key shortcut by assigning it to a specific function from the function drop-down list. The functions available for **Up / Down** key shortcuts selections are listed below:

| Function | Description |
|---|---|
| Volume Up, Volume Down | Adjust System Volume. |
| Brightness Up, Brightness Down | Adjust Screen Brightness. |
| Q-Start | Program shortcut key (Please see Section 4.12.5 Q-Start Page). |

**Configuring Home + F1, Home + F2, Home + Up Combo key Shortcuts:**




**Home + F1 key, Home + F2 key, Home + Up key**  (as shown above) can be configured as combo shortcut keys to perform one of the functions below quickly:

| Function | Description |
|---|---|
| Ctrl+Alt+Delete | Bring up Windows Security. |
| Rotate Lock | Control Screen Rotate lock. |
| Screenshot | Screenshot into clipboard. |

**Configuring Home + Down key as a Combo Key Shortcut:**


You can customize the **Home + Down key**  combo key shortcut from the drop-down lists to assign a specific function quickly:

The functions available for selections are listed below:

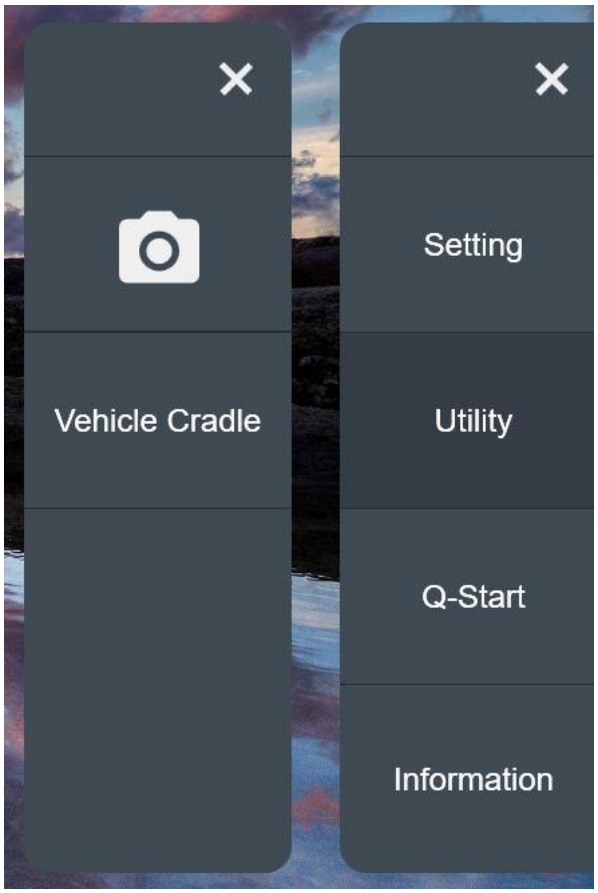
| Function | Description |
|---|---|
| Ctrl+Alt+Delete | Bring up Windows Security. |
| Rotate Lock | Control Screen Rotate lock. |
| Screenshot | Screenshot into clipboard. |
| P Control Board | Open P Control Board. |

Note that you can only launch the P Control Board by configuring **Home + Down** combo key shortcut  .

### 4.11.4 Utility Page

All application tools have been developed for ART-810 Tablet.

<Note> Other programs will be added in the future at this page.

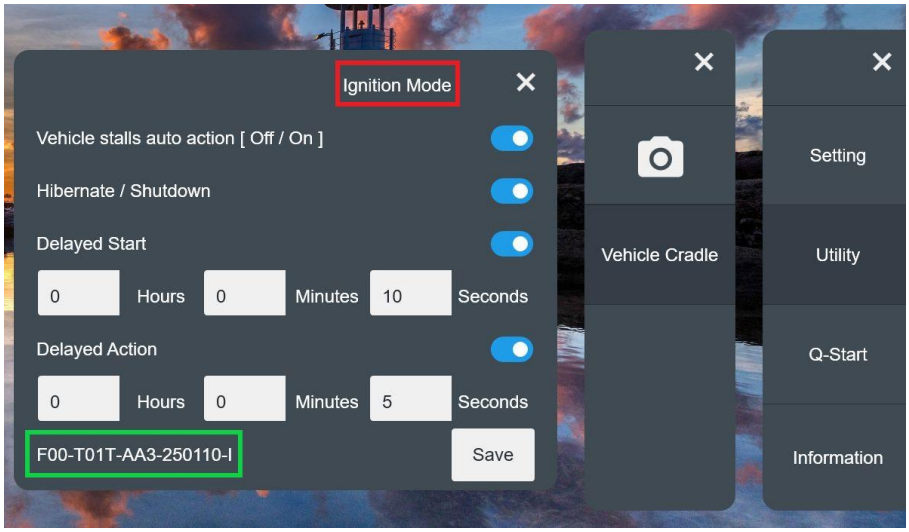



# Using Utility: P Camera

Tap the camera icon to quickly open the camera app. (See Chapter 4.14 P Camera for details.)

# Using Utility: Vehicle Cradle

The tablet can be used with vehicle Cradle to achieve delayed startup and delayed shutdown functions.
(The Delayed Start function is available in specific BIOS & EC version)




**Mode Status** (Red Square): The vehicle cradle provides two modes according to its functions. Ignition Mode & CIG Mode (Vehicle Cradle has different firmware versions).

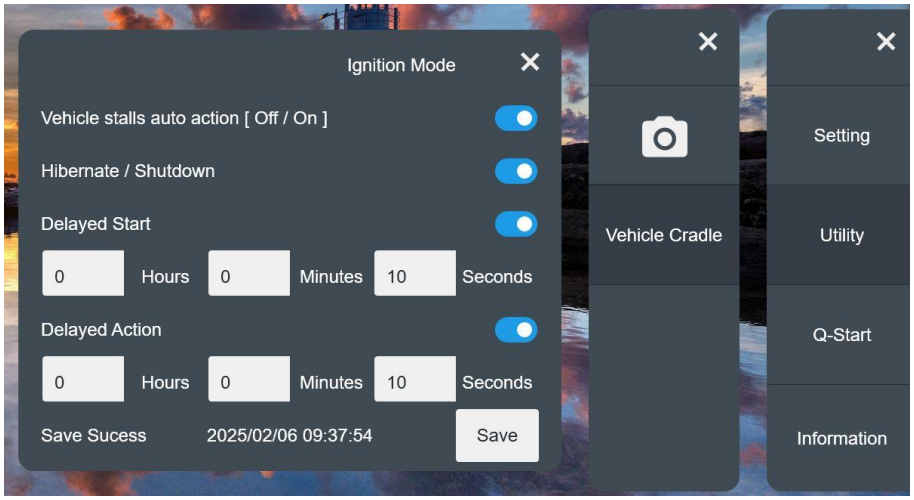
**Vehicle Cradle firmware version** (Green Square): The version number will be displayed after the Vehicle Cradle is successfully connected.

- **Vehicle stalls auto action:** When this function is turned on and after the tablet is powered off, the tablet will start timing according to the delayed action time setting.
- **Hibernate/Shutdown:** Select vehicle stalls action.

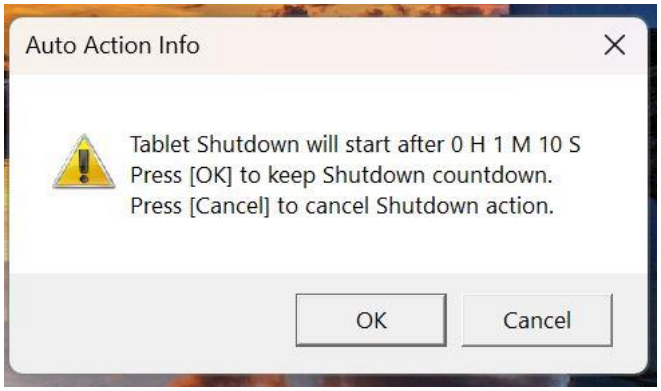
- **Delayed Start:** When the **Vehicle stalls auto action** function is turned off, startup tablet immediately. When the **Vehicle stalls auto action** function is turned on, the system will delay startup according to the set time.(Maximum time: 1 Hours 59 Minutes 59 Seconds)

- **Delayed Action:** When the **Vehicle stalls auto action** function is turned off, perform the action immediately. When the **Vehicle stalls auto action** function is turned on, the system will delay the action specified according to the set time. (Maximum time：1 Hours 59 Minutes 59 Seconds)

- Click the **Save** button to transfer the setting data to the Vehicle Cradle for storage.

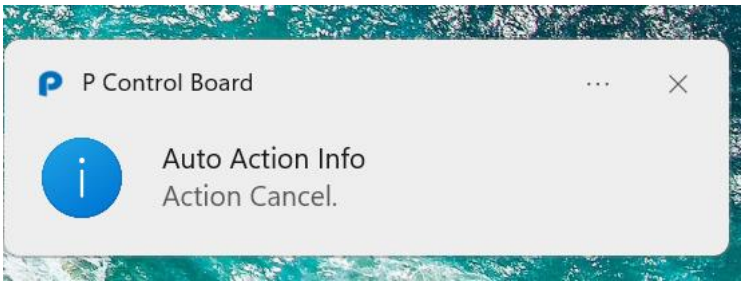



When the data is successfully transferred, the page will display the transfer success time and message.




When the tablet power is cut off & vehicle stalls auto action function is ON, **Auto Action Info** window will display the **Hibernate / Shutdown** action specified & delayed action time info.

Press [OK] to keep the action.




Press [Cancel] to cancel the action & display the cancel notification.

### 4.11.5 Q-Start Page

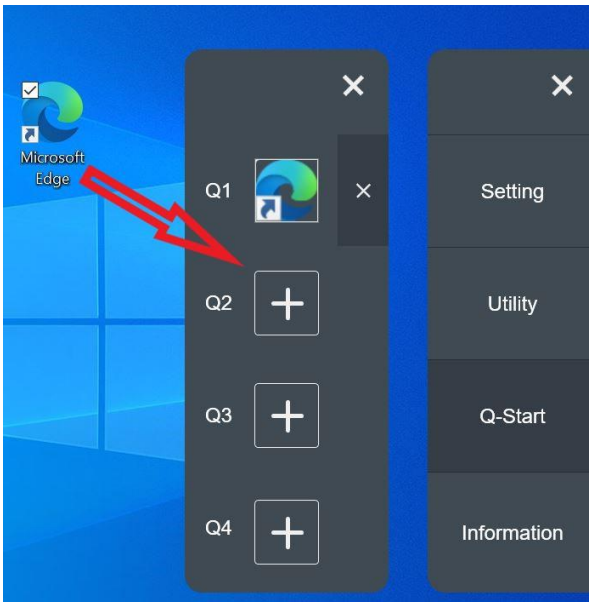
The **Q-Start** function allows user to quickly start up an application program or a file. The function can be set and triggered from this page (click the **Q-Start** menu icon from P Control Board) or use the tablet front buttons (See page 4-29 and set **Q-Start** function from **Button Pool** page).

## Setting Q-Start

To set the **Q-Start** function for an application program or a file, use the two methods described below:

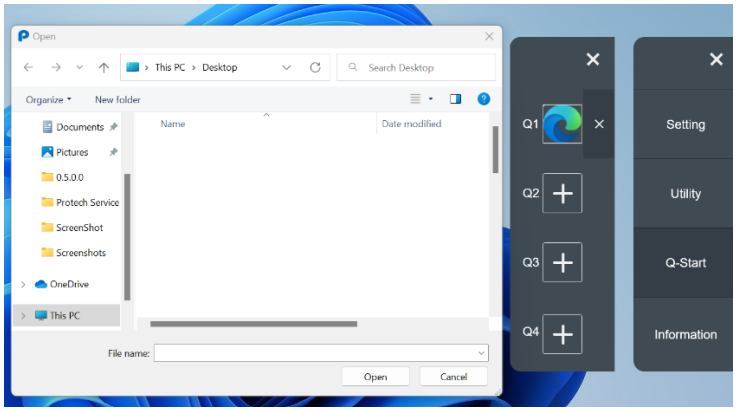
**1. Dragging an intended file**

Drag an application program file or a file into the **"+"** icon as shown below:




**2. Using Program Selector Window**

Click + icon to open the file selector window. Select a file and then click **Open**.

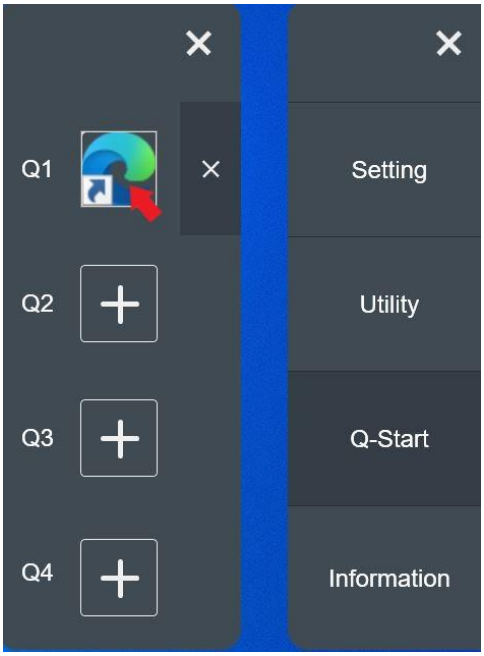


### Trigger Q-Start

To trigger and quickly start up an application program or a file set previously under **Q-Start** menu, use the two methods described below:

**1. Click Icon**

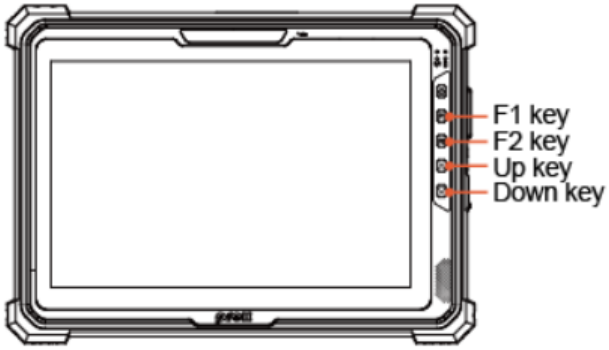
Click Q1 icon for example to quickly open the application program (as shown below):




**2. Using Tablet Button**

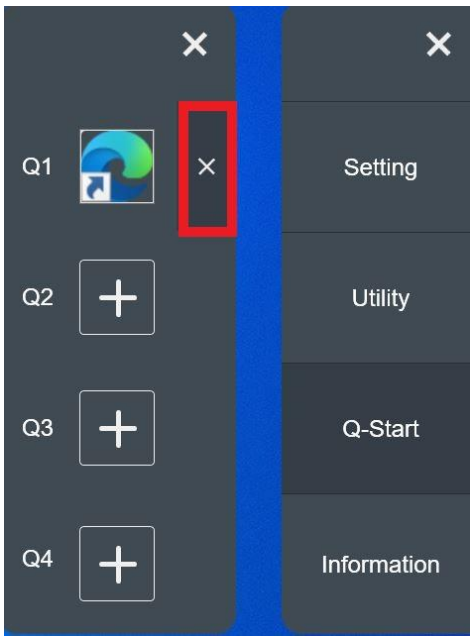
You can also select to use Tablet Programmable Function Keys F1(Q1), F2(Q2), Up(Q3), Down(Q4) keys to quickly open an application programs or a file.

Before you can use the programmable function keys (F1(Q1), F2(Q2), Up(Q3), Down(Q4)) to quickly open up an application program or file, you need to first set **Q-Start** function in **Button Pool** menu. See Section 4.12.3 Button Pool Page.



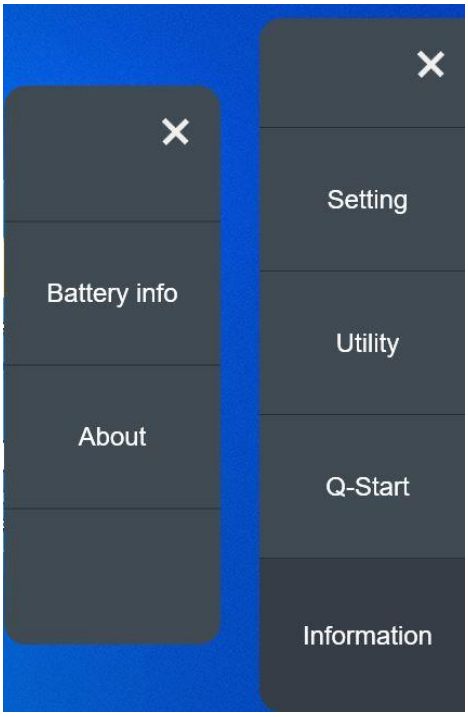
### Cancel Q-Start

Click the "**X**" on the right side of the Q1 icon (for example) to cancel the Q-Start setting. (Red Rectangle)



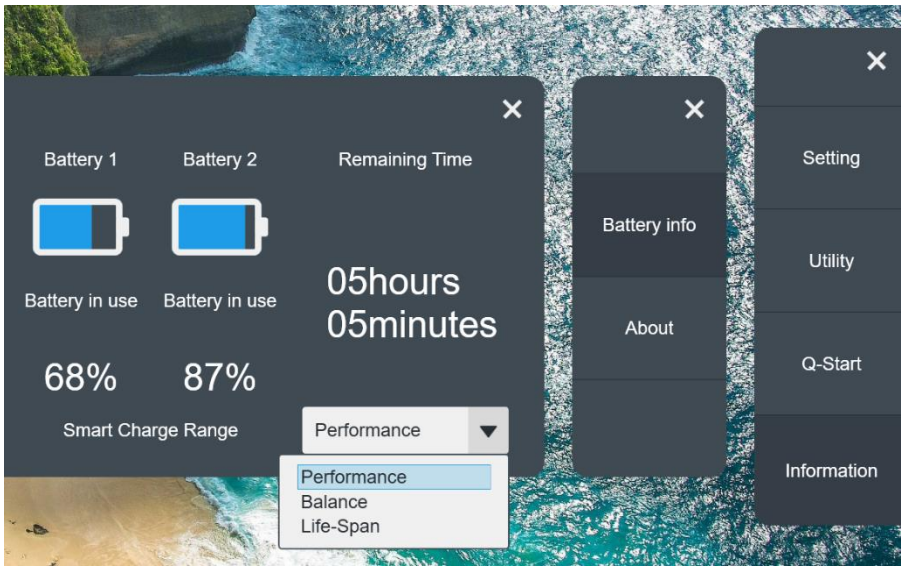

### 4.11.6 Information Page

**Information** page allows users to view battery information, change language options, check app version and view user manual.



## Battery info

The **Battery info** item allows users to check two battery percentage, system remaining time, Smart Charge Range.




**Smart Charge Range has 3 different modes:**

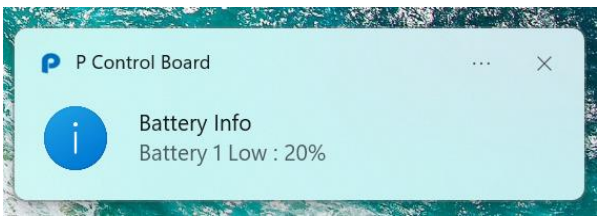
- **Performance:** Charge Battery to Fully Charge.
- **Balance:** Charge Battery to high level.
- **Life-Span:** Charge Battery to medium level and protect battery life time.

## Notification

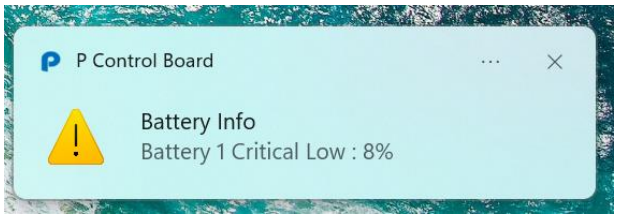
The **Notification** warning messages will display to alert users when the following conditions occur on your tablet:

The following low battery notification message will appear on the tablet screen when the tablet battery 1/2 is running low:

- **Low Battery** notification message will pop up when the tablet battery 1/2 reaches the low battery level **20%**.

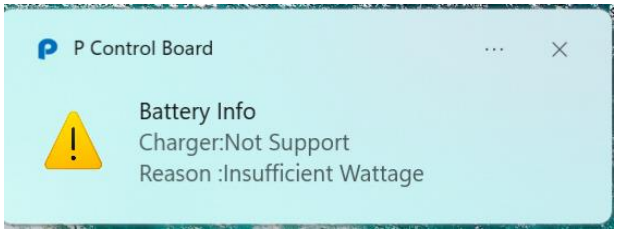


- **Critically Low Battery** notification message will pop up when the tablet battery 1/2 reaches the critically low battery level **8%**.



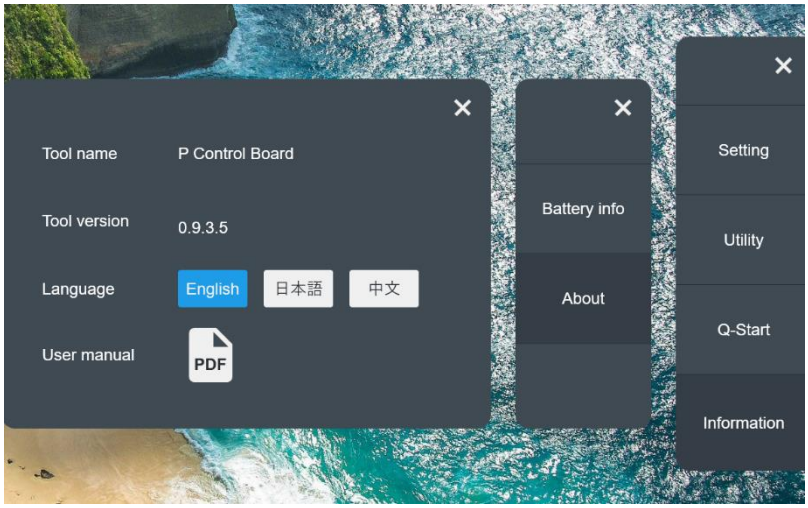

The notification message below will appear on the tablet screen when the power supply of the inserted PD Charger is disqualified:

- **Charger: Not Supported** notification message will pop up when the power supply of the plugged-in PD charger is lower than **65W**.



### About

The **About** item allows users to change language option, check app version and view user manual.



### 4.11.7 Batter Shipping Mode

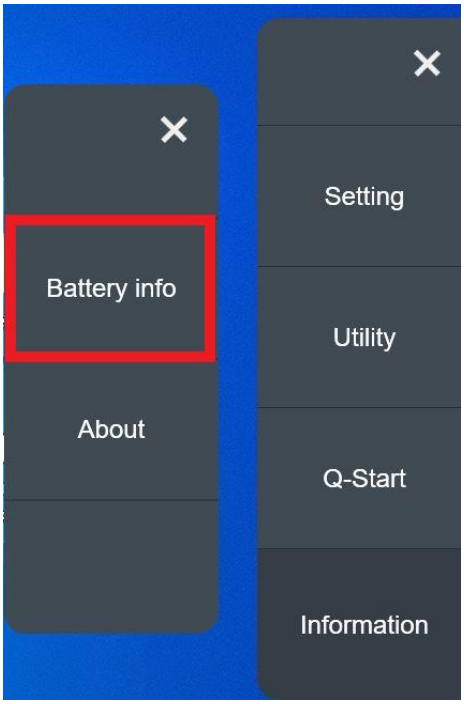
**Preventing Battery Over-Discharging**

To prevent the battery from over-discharging, it is highly recommended that you enable the Battery Shipping Mode for ART-810 tablet if users need to store the purchased tablets (with battery) for a long time.

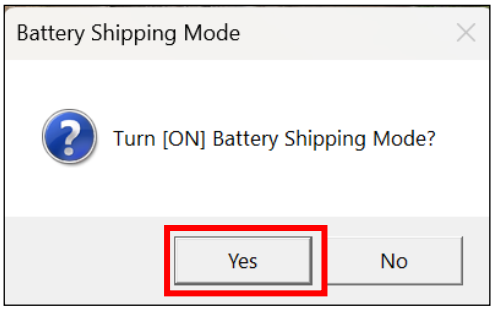
**Enabling Battery Shipping Mode:**

Follow the instructions below to enable Battery Shipping Mode for the purchased ART-810 tablet:

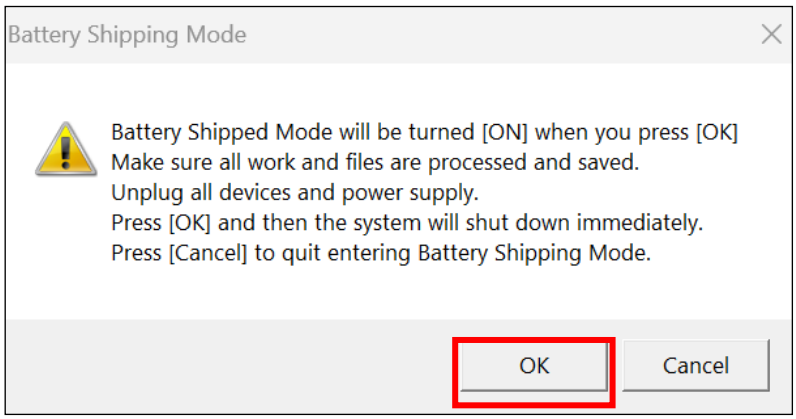
1. From **Information** page, quick click **Battery info** icon for 5 times within 4 seconds.



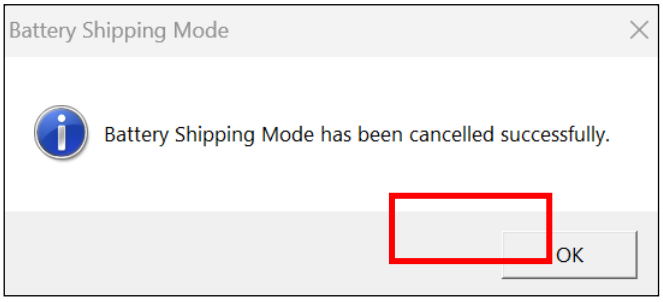

2. Select [ Yes ] to turn [ON] Shipping Mode.



3. Check if all your work and files have been processed and saved successfully. Unplug all devices and power supply. Press [ OK ] and then the system will shut down immediately and the Battery Shipping Mode will be turned [ON].




If you don't need ART-810 tablet to enter Battery Shipping Mode, simply press [ Cancel ] to quit enter Battery Shipping Mode. The following message box appears.




4. When the tablet shuts down, you will see battery LED indicator light flashes back and forth between red, yellow, and green until the tablet enters Battery Shipping mode successfully.

**Exit Battery Shipping Mode:**

1. Plug in any power supply: AC adaptor or Type-C PD charger (Power > 65W).
2. The plug-in time must be at least greater than 30 seconds.
3. Make sure the battery LED indicator light displays properly.
4. Now you can use your device normally.

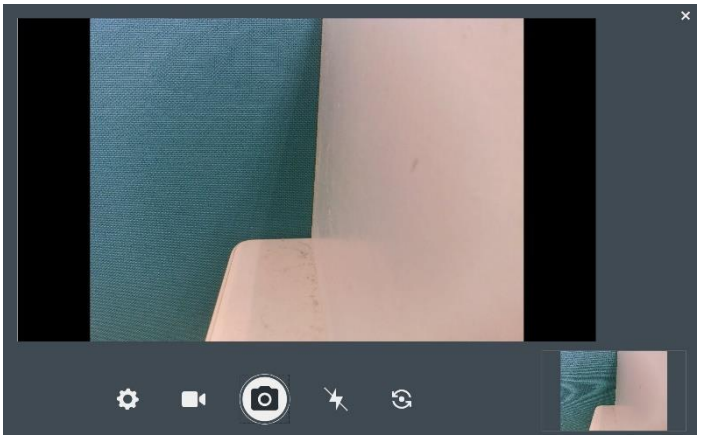
# 4.12 P Camera

**P Camera** is a basic capture photo and video recording camera application. It can be used with P Control Board to achieve the function of using Tablet front-side physical buttons to launch the program and take photos. (See Section 4.12.3 Button Pool Page on how to use camera functions by configuring Tablet programmable front-side buttons.) <Note> You need to install **P Control Board** first before you can use Tablet front-side button to capture photos.

### 4.12.1 Photo Mode

The function menu items at the bottom from left to right are listed below:

| Function Item | Description |
|---|---|
| Setting | Provides settings parameters. |
| Video Mode | Please see Section 4.13.2 Video Mode. |
| Photo Mode | Click to take photos. |
| Flashlight | Click to turn on or off Flashlight. |
| Switch Camera | Click to switch between front camera and rear camera. |

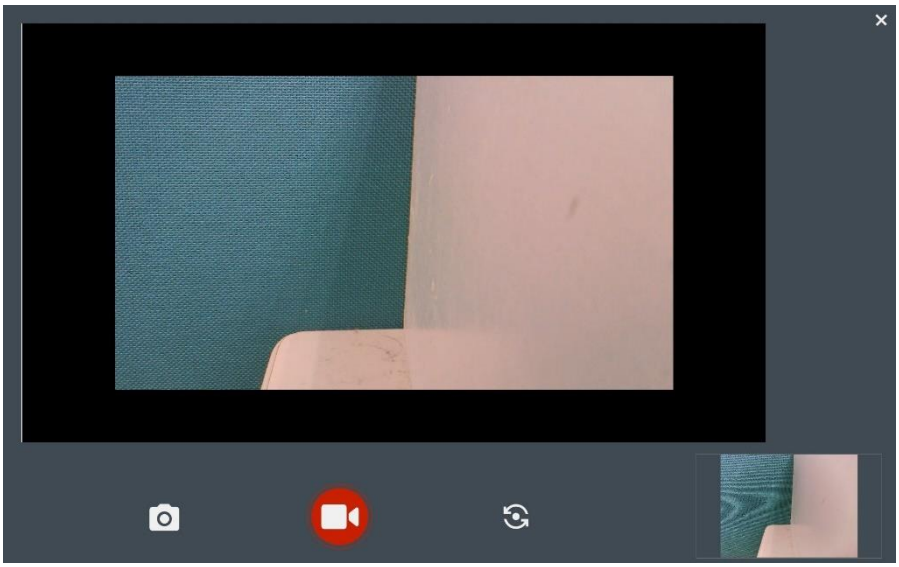


Click the thumbnail from the lower right corner to open the latest shot photo or a recorded video.

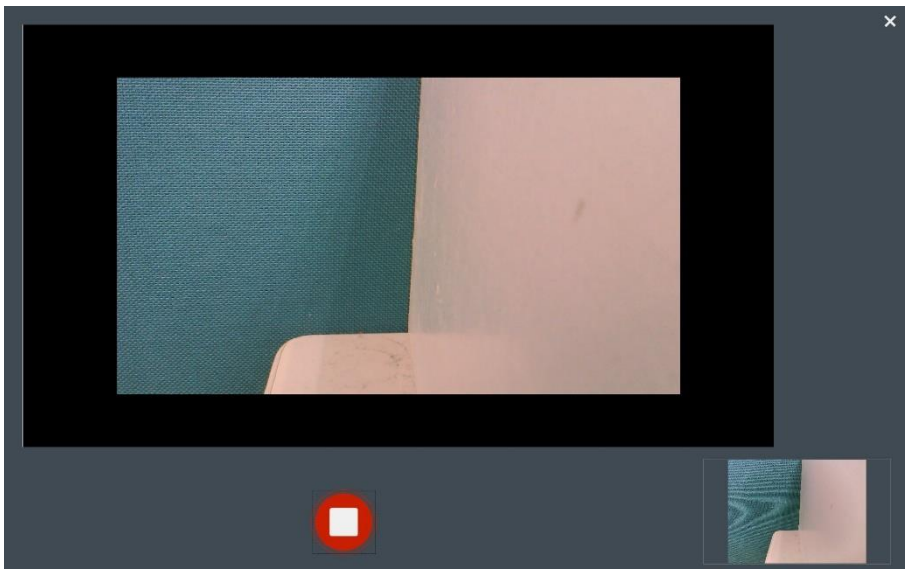
### 4.12.2 Video Mode

The function menu items of Video Mode are located at the bottom of the screen and are described below (from left to right):

| Function Item | Description |
|---|---|
|  **Photo Mode** | Click to take photos. (Please see **Section 4.13.1 Photo Mode** for details.) |
| **Recording Video** | The red Recording Video icon indicates a video is being recorded. |
|  **Switch Camera** | Click to switch between front camera and rear camera. |



While a video is being recorded, click the red button  as shown below to stop the recording process.



### 4.12.3 Changing Video File Saving Path

To save a recorded video file to a specific file folder (different from the system default saving path), click the **Setting** icon  on the bottom (see Page 4-41) and follow the instructions below to change the intended folder under which you want to save your video.


1. Click **Options** to open the folder selector window. (see the picture above)
2. Browse and select a folder to save the file and then click **Select Folder** button.
3. Click "**X**" located on the upper right corner to close the window and go back to P Camera menu.