User Manual GFK-3138B Jul 2021

# PACSystems<sup>™</sup> Industrial Display User Manual





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## Warnings and Caution Notes as Used in this Publication

### **WARNING**

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

# **A** CAUTION

Caution notices are used where equipment might be damaged if care is not taken.

**Note:** Notes merely call attention to information that is especially significant to understanding and operating the equipment.

These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met during installation, operation, and maintenance. The information is supplied for informational purposes only, and Emerson makes no warranty as to the accuracy of the information included herein. Changes, modifications, and/or improvements to equipment and specifications are made periodically and these changes may or may not be reflected herein. It is understood that Emerson may make changes, modifications, or improvements to the equipment referenced herein or to the document itself at any time. This document is intended for trained personnel familiar with the Emerson products referenced herein.

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# Section 1: Introduction

# 1.1 An Introduction to RXi – Industrial Displays

RXi – Industrial Displays are a modular and fanless display portfolio consisting of industrial monitors, web panels, and panel PC options to suit customer visualization and computing needs. The entire portfolio features IP66-rated screens that protect against dust, moisture, and waterjets as well as a range of TFT LCD screen sizes in a 16:9 format: 7", 10", 12", 15", 19", 24". The RXi – Industrial Displays family includes outdoor, sunlight-readable screens for 7" – 15" screens. The screens are projected capacitive touch screens and have a multi-touch functionality. The front of the screens includes a light sensor, which allows for the screens to automatically adjust to changes in ambient light and system power LED light.

# 1.2 Revisions in This Manual

Revision	Date	Description
В	Jul 2021	Updated Pin Configuration for Serial Port (UART)
А	Dec 2020	Initial Release

# 1.2.1 Advantages to RXi - Industrial Displays

## **Scratch Resistance**

The RXi – Industrial Displays are robust displays engineered to resist the harshest environments. The industrial displays feature scratch-resistant glass without the use of plastic overlays and feature screen sensitivity options to adapt to a user's protective gear (PPE).

- All RXi Industrial Displays have specifical PCAP screens
- No Plastic Resistive overly
- Special Glass has a 7 rating on the Mohs Hardness scale.
- The Mohs scale measures the hardness of various materials"
  - Harder materials can scratch softer ones
  - Softer materials are unable to scratch harder ones
  - RXi Industrial Displays have a strong resistance

against scratching from fingernails, knives, keys, and standard steel tools.





### **Screen Chemical Resistances**

- Acetone
- Unleaded Gasoline
- Isopropyl Alcohol
- Motor Oil
- Laundry Detergents
- 5% Salt Water
- Hydraulic Fluid
  - Skydrol



### **Glove Compatibility**

RXi Industrial Displays are compatible with a wide variety of PPE, which eliminates the need for a worker to remove gloves to interface with the screens. The figure below illustrates glove compatibility.

The following values represent glove compatibility on the standard sensitivity setting

The sensitivity of the RXi – Industrial Displays can be increased.

Globe Thickness (mm)	Glove Material	Glove Photo
0.12	Latex	N. A.
0.85	Nylon	
0.85	Polyester	
1.85	Cotton	
1.85	Cotton	
0.85	Leather	

# 1.3 RXi - Industrial Monitor



# 1.3.1 Primary Technical Features

- HDMI, DP, DP-out (MST-daisy chain), Line-out, USB ports
- On-Screen Display (OSD) on the left side
- 7"/10"/12"/15"/19"/24" Widescreen Display
- 7"/10"/12"/15" Industrial Widescreen Outdoor Sunlight Readable Screens
- TFT LCD Industrial Display
- Aluminum chassis

# 1.3.2 Display Architectural Options

MST Daisy-Chained together using DisplayPort In and DisplayPort Out ports top pass Audio and Video signals in either an "Extended" or "Cloned" configuration.

The maximum number of MST daisy-chained displays with DisplayPort 1.2 is four displays. The number of RXi – Industrial Monitors will be limited by the graphical capabilities of the attached hardware. The figure below illustrates which hardware offers the most graphical power.

# Figure 2: Daisy Chaining RXi2 - LP Industrial PC with 2x RXi - Industrial PC with 2x RXi - Industrial PC with 4x RXi - Industrial PC with 3x RXi - Industrial PC with

To enable touchscreen capabilities, the USB cable must be attached from the individual screen back to the IPC.

**Note**: Microsoft Windows limits user input to one touchscreen at a time, even with multiple screens attached to the IPC.

# 1.3.3 Backing Module and Screen Compatibility

#### Figure 3: Backing Module and Screens



# 1.3.4 Configuration and Setup RXi Industrial Monitor

# On-Screen Display (OSD)

#### **AD Board OSD Functions**



### **Enter Burn-in Mode**

Before entering the burn-in mode, first, disconnect the AC power cord, then press and hold the **Y** buttons, then release after the AC power cord is connected and the **RGB** appears on the top left corner of your screen. Now it can be put into the burn-in mode for changing colors.

### Exit Burn-in Mode

Before exiting burn-in mode, please first disconnect the AC power cord, then press the volution (If for any reason this button is non-functional, press and hold the volution) until the AC power cord is connected. Do not release the button until the AC power cord is connected again and the wording of **RGB** appears on the top left corner of your screen, then wait for 3 seconds. If there is no input plugged into the unit, the **CABLE NOT CONNECTED** message will denote that it has successfully left burn-in mode.

### If unable to exit Burn-in Mode

If the **RGB** is still on the top left corner of the screen, press  $\buildrel u$  to enter **Miscellaneous** and choose **Reset**,

and then select **Yes**, and press **U**. When the screen goes black, disconnect power and repeat the above steps.

If the RGB is not found, disconnect the AC power cord first, then press and hold the O to uttons until the AC power cord is connected, and wait for 2 to 3 seconds. When **RGB** appears, repeat the above steps.

# **OSD Controls**

# **OSD Keypad**

To make any adjustment to the settings of the Industrial Monitor, select the following:

- 1. Press 🕌 (Menu) to show the OSD menu or dismiss the OSD menu.
- 2. Select the icon that you wish to adjust with the  $(\mathbf{V}/\mathbf{A})$  key in the menu.
- 3. Press  $\bigcup$  (Menu) and then choose the item with the  $(\checkmark \land)$  key.
- 4. Press  $\bigcup$  (Menu) and then adjust the quality with the ( $\checkmark$ / $\checkmark$ ) key.

# Virtual OSD Keypad

- 1. Press Menu to show the OSD menu or dismiss the OSD menu.
- 2. Navigate to the icon that you wish to adjust with the (+) and (-) keys in the menu.
- 3. Press Menu and then choose the item with the (+) and (-) keys.
- 4. Press Menu and then adjust the quality with the (+) and (-) keys

#### Figure 5: Virtual OSD Keyboard

MONITOR OSE	þ		
Menu	+	_	Select

### Main Menu

#### Picture

To access the main menu, push the **Menu** button on the OSD controls.

### Figure 6: Picture Menu Options



Menu Items	Descriptions
AutoBacklight	Adjusts the brightness of the screen based on the brightness level of
	the video in use
Backlight	Adjusts the brightness of the display
Brightness	Adjusts the colors levels to simulate brightness
Contrast	Adjusts the scale factor (gain) to the red, green, and blue signals
Sharpness	Adjusts the clarity of a display's picture or text

### Display

Figure 7: Display Menu Options



Menu Items	Descriptions
AutoAdjust	The screen will calibrate the display to show the best screen
AutoAujust	orientation and position
H Position Moves the screen left or right (horizontally)	
V Position	Moves the screen up or down (vertically)
Disp Rotate	Rotates the display orientation (landscape/portrait)

### Color

Figure 8: Color Menu Options



Menu Items	Descriptions
Panel Uniformity	Adjusts color consistency across the screen
Gamma	Adjusts gamma value
Temperature	Adjusts temperature value
Color Effect	Adjusts color effect

### Input

Figure 9: Input Menu Options



Menu Items	Descriptions
Auto Select	Automatically displays input from whichever ports are supplying media
DP	Manually displays input from DisplayPort port
HDMI	Manually displays input from HDMI port

### Audio

### Figure 10: Audio Menu Options



Menu Items	Descriptions
Volume	Increases or decreases the volume level
Mute	Toggles volume on or off

# Other (Menu Item)

### Figure 11: Other Menu Options



Menu Items	Descriptions
Reset	It will reset the values to original/ default values.
Menu Time	Adjusts the time that the menu will remain on-screen after
	pressing the menu button.
OSD H Position	Moves the virtual OSD menu left or right (horizontally)
OSD V Position	Moves the virtual OSD menu up or down (vertically)

# 1.4 RXi - Panel PC



The RXi - Panel PC is a modular display portfolio that offers multiple options of separable screens and computing units, which maximize flexibility, performance, and durability. The portfolio ranges from 7" to 24" screens in a widescreen format, with 7" to 15" models also available with outdoor sunlight readable screens. The modular nature of the unit allows users to easily swap an indoor screen for an outdoor screen, change screen sizes, or simply replace a damaged screen while utilizing the same computing unit.

There are two variants of the RXi - Panel PC, base and advanced (high performance AMD Ryzen processor). The base model comes with either a Dual-Core 1.0 GHz or a Quad-Core 1.2 GHz AMD G-Series processor with 4 GB or 8 GB of available DDR3 RAM available. The advanced module comes with Quad-Core 2.0 GHz AMD Ryzen Series processor with 8 GB or 16 GB of DDR4 RAM. All RXi - Panel PCs come with Windows 10 IOT Enterprise LTSC OS installed standard. The high resolution, multitouch, projective capacitive screens can be used with personal protective equipment and feature quick response times.

The outdoor-rated sunlight-readable screens are optically bonded and feature UV protection reducing reflections and glare. All indoor and outdoor rated configurations carry the same certifications and capabilities.

The entire RXi – Panel PC portfolio features IP66 rated screens that protect against dust, moisture, and even direct water jets. The effective operating temperatures range as high as 65 °C and as low as -20 °C. With Marine, ATEX/IECEX, and HazLoc certifications, the RXi - Panel PC provides you with a solution that is designed to go where you need it to.

# 1.4.1 Primary Technical Features (Base Model)

- 7"/ 10"/ 12"/ 15"/ 19"/ 24" Industrial Widescreens
- 7"/10"/12"/15" Industrial Widescreen Outdoor Sunlight Readable Screens
- Flat Front Panel Projected Capacitive Touch Screens
- Modular Design
- AMD Embedded G-Series SOC Processor
- Onboard DDR3L, up to 8GB (Soldered with ECC)
- Fanless Design
- 1x M2 SSD slot
- 4x 10/100 base T Ethernet RJ45
- 1x RS-232, 1x RS-485
- 2x USB 3.0, 2x USB 2.0
- 1x Display port
- 1x Mic-in, 1x Line-out
- 24VDC Wide Range Power Input
- 1 x External Micro SD/ SDHS Card Slot (up to 32 GB)
- Secure & Trusted Boot Capability

# 1.4.2 Primary Technical Features (with AMD Ryzen)

Primary technical features:

- 12"/ 15"/ 19"/ 24" Industrial Widescreens
- 12"/ 15" Industrial Widescreen Outdoor Sunlight Readable Screens
- Flat Front Panel Projected Capacitive Touch Screens
- Modular Design
- AMD Embedded V1000 Series SoC (V1404i )
- Fanless Design
- 1x M2 SSD slot
- 4x 10/100 base T Ethernet RJ45
- 1x RS-232, 1x RS-485
- 2x USB 3.0, 2x USB 2.0
- 1x Display port
- 1x Mic-in, 1x Line-out
- 24VDC Wide Range Power Input
- 1 x External Micro SD/ SDHS Card Slot (up to 32 GB)

Secure & Trusted Boot Capability

# 1.4.3 Display Architectural Options

The RXi – Panel PC can operate as a stand-alone unit or connect directly with an RXi – Industrial Monitor for dual-screen operation. For more information, please see the RXi – Industrial Monitors Data Sheet.



#### Figure 12: Configuration

# 1.4.4 Drivers Installation

Note: Instructions are the same for Panel PC with or without AMD Ryzen.

1. Read and accept the End User License Agreement (Figure 13).

#### Figure 13: End User License Agreement

AMDZI SOFTWARE	×
END USER LICENSE AGREEMENT	I
(AMD Radeon™ Software)	
IMPORTANT-READ CAREFULLY: DO NOT INSTALL, COPY OR USE THE ENCLOSED SOFTWARE, DOCUMENTATION (AS DEFINED BELOW), OR ANY PORTION THEREOF, (COLLECTWELY "SOFTWARE") UNTL YOU HAVE CAREFULLY READ AND AGREED TO THE FOLLOWING TERMS AND CONDITIONS THIS IS A LEGAL AGREEMENT ("AGREEMENT") BETWEEN YOU (EITHER AN INDIVIDUAL OR AN ENTITY) (COLLECTIVELY "YOU" AND "YOUR") AND ADVANCED MICRO DEVICES, INC ("AMD").	
IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, DO NOT INSTALL, COPY OR USE THIS SOFTWARE. BY INSTALLING, COPYING OR USING THE SOFTWARE YOU AGREE TO ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT.	
1. DEFINITIONS	
1. "Documentation" means install scripts and online or electronic documentation associated, included, or provided in connection with the Software, or any portion thereof.	
Accept and Install	

## **Express Installation**

There are two installation processes. Express Installation is the easiest:

- 1. Select Express Install (Figure 14).
- 2. Once the installation is complete, select **Restart Computer** (Figure 15).

Note: It is strongly encouraged to restart the Panel PC before continuing.

Figure 14: Express Install



#### Figure 15: Restart Now

AMD	SOFTWARE				- ×
			,		
		Radeon Soft	ware (17.7) has been installed		
Keep system	up-to-date			Restart Now	Close

## **Custom Installation**

Customer installation is available to allow users to specify which drivers they want to install. To proceed:

- 1. Select Custom Install (Figure 16).
- 2. Select your driver requirements and click Install (Figure 17).
- 3. Restart the computer when the installation is complete (Figure 18).

#### Figure 16: Custom Install



#### Figure 17: Drivers Selection

AMDA SOFTWARE		_	×				
Install Location: C:\Program Files\AMD							
AMD Display Driver Version: 23.20.808.1280	AMD eMMC4.5.1 Driver	AMD HDMI Audio Driver Version: 10.0.1.06	×				
AMD PSP Driver Version: 4.5.0.0	AMD Radeon Settings Version: 2018.0214.329.6243	AMD SMBus Driver Version: 5.12.0.38	<b>V</b>				
	Install						

#### Figure 18: Restart Now

AMD	S O F T W A R E			—	×
			$\checkmark$		
	Rade	on Sofi	ware (17.7) has been installed		
Keep system	up-to-date		Restart Now	Clos	se

**Note**: It is strongly encouraged to restart the Panel PC before continuing.

# 1.4.5 Configuration and Setup with RXi – Panel PC

## Set Brightness in Panel PC

Changing the screen brightness of a Panel PC must be done in the BIOS.

- 1. During startup, repeatedly press the **Delete** key.
- 2. Press the right arrow key two times to navigate to the **Chipset** heading under the BIOS menu.
- 3. Under the **Chipset** menu in BIOS, press the down arrow key twice to highlight the **Display Control** submenu and press Enter to select.
- 4. Under the **Display Control** submenu, press the down arrow key twice to highlight the **"Auto Backlight Dimming** setting and press enter to select
- 5. Once you have selected the Auto Backlight Dimming option, change the setting to Disabled
- 6. Once the setting has been adjusted, press the ESC key to exit the submenu. You may then save and exit the BIOS to start the operating system with your desired settings in effect.

# 1.4.6 Accessing the BIOS (Panel PC)

The BIOS is a program that handles basic levels of communication between the CPU and peripherals. It contains codes for various advanced features found in this system board. The BIOS allows you to configure the system and save the configuration in a battery-backed CMOS so that the data is retained even when the power is off. In general, the information stored in the CMOS RAM of the EEPROM will stay unchanged unless a configuration change has been made, such as a hard drive replaced or a device has been added.

The CMOS battery can fail over time, causing CMOS data loss. If this happens, you need to install a new CMOS battery and reconfigure the BIOS settings.

Keys	Function
Right and Left arrows	Moves the highlight left or right to select a menu.
Up and Down arrows	Moves the highlight up or down between submenu or fields.
Enter	Press <b>Enter</b> to enter the highlighted submenu or item.
+ (plus key)	Scrolls forward through the values or options of the highlighted field.
- (minus key)	Scrolls backward through the values or options of the highlighted field.
<f1></f1>	Displays general help
<f2></f2>	Pervious values
<f3></f3>	Load Optimized Defaults
<f4></f4>	Saves and resets the setup program.
<esc></esc>	Exit to the BIOS Setup Utility.

#### Submenu

When "□" appears on the left of a particular field, it indicates that a submenu that contains additional options are available for that field. To display the submenu, move the highlight to that field and press **Enter**.

### AMI BIOS Setup Utility (Panel PC)

### **Accessing the BIOS**

To access the BIOS, you must attach a USB keyboard to the device and repeatedly press the **Delete** key during the startup sequence until it brings you to the BIOS Main Menu.

### Main Menu

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.

#### Figure 19: Main Menu

Aptio Setup Utili Main Advanced Chipset Boot	ty – Copyright (C) 2019 American Security Save & Exit	n Megatrends, Inc.
BIOS Information Project Name BIOS Version	SBC7818 194.156	Choose the system default Language
Memory Information Total Memory	8192 MB (DDR3)	
System Date System Time	[Thu 10/08/2020] [10:06:31]	
Access Level	Administrator	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit</pre>
Version 2.17.124	6. Copyright (C) 2019 American M	egatrends. Inc.

<b>BIOS Parameter</b>	Description			
System	Choose the system default language.			
Language				
System Date	The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from 01 to 12. Date displays the date, from 01 to 31. Year displays the year, from 1980 to 2099.</year></date></month></day>			
Time	The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.</second></minute></hour>			

### Advanced

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others if enabled, will improve the performance of your system or allow the user to set some features according to their preference.

#### Figure 20: Advanced Menu

Aptie	Setup Utility	- Copyri	ght (C) 2018	American Meg	atrends, Inc.
Main Advance	Chipset	Boot	Security	Save & Exit	
ACPI Setting:     Trusted Computing     Waksup Configuratio     IDE Configuration     USB Configuration     NCT6112D Super     NCT6112D HW M     NCT6112D Super     Network Stack Con	on O Configuratio mitor O Features figuration	<u>m</u>			System ACPI Parameters. →+-: Select Screen ?4: Select Item Enter: Select +-: Change Opt. F1: General Help F2: Provious Values F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit
Version 2.17.1246. Copyright (C) 2018 American Megatrands, Inc.					

### **ACPI Settings**

This section configures system ACPI parameters.

#### Figure 21: ACPI Settings

ACPI Settings.		
Enable ACPI Auto Configuration Enable Hilbernation . ACPI Sleep State .	[Disabled] [Ensbled] [S3 oply(Suspend to]	Enables or Disables BIOS ACPI Auto Configuration
		→ Select Screen. ( ↑↓: Select Item Enter: Select. ( +/-: Change Opt. F1: General Help F2: Previous Valuus. ( F3: Optimized Definits. ( F4: Save Changes and Reset ESC: Exit. (

<b>BIOS Parameter</b>	Description
ACPI Auto	This field is used to enable or disable BIOS ACPI auto configuration.
Configuration	
Enable Hibernation	This field is used to enable or disable the system's ability to hibernate (OS/S4 Sleep State). This option may not be functional with all operating systems.

# **Trusted Computing**

This section is used to configure the Trusted Computing settings.

### Figure 22: Trusted Computing

Aptio Setup Utility Advanced	y - Copyright (C) 2018 Ameri	can Megatrends, Inc.
TPM20 Device Found Vandor: IFX Firmware Version: 5.62 Security Device Support Panding operation	[Enable] [None]	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.
		-+-: Select Screen 7.4: Select Item Enter: Select ++:- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit
Version 2.17.124	<ol> <li>Copyright (C) 2018 America</li> </ol>	an Megatrends, Inc.

BIOS Parameter	Description		
Security Device Support	Enable or disable BIOS support for a security device. The Operating System will not show a security device. TCG EFI protocol and INT1A interface will not be available.		
Pending Operation	Schedule an operation for the security device. Your computer will reboot during restart to change the state of the security device.		

# Wakeup Configuration

This section is used to configure the Wakeup ACPI Power Management.

### Figure 23: Wakeup Configuration

Aprio Setup Utility - Copyright (C) 2018 American Megatrends, Inc Advanced				
DFI Wakeup ACPI Power Manag	DFI Wakeup ACPI Power Management Configuration			
Resume by PME Resume by USB	[Disabled] [Disabled]			
		→ ←: Select Screen., ↑4: Select Item Enter: Select., +/-: Change Opt. F1: General Help F2: Previous Value., F3: Optimized Defaults., F4: Save Changes and Reset ESC: Exit.,		
Version 2.17.1246. Copyright (C) 2018 American Megatrends, Inc.				

BIOS Parameter	Description	
Resume by PME	Enable or disable to resume by PME (PCI, PCIe, LAN, etc.)	
Resume by USB	Enable or disable to resume by USB.	

# **CPU Configuration**

This section is used to configure the CPU. It will also display the detected CPU information.

### Figure 24: CPU Configuration

Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.		
Advanced		
CPU Configuration	Enable/disable CPU Virtu- alization	
Module Vertica: 4.6.5.4 MullinsPI 038 AGESA Vertica: 1.0.0.J		
SVM Mode [Enabled] Core Leveling Mode [Automatic mode] > Node 0 Information		
	V. Salart Server	
	TJ: Select Item Enter: Select	
	+/-: Change Opt F1: General Help F2: Previous Values	
	F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit	
Version 2.17.1246. Copyright (C) 2018 American Megatrends, Inc.		

<b>BIOS Parameter</b>	Description
SVM Mode	Enable or disable CPU Virtualization.
Core Leveling Mode	Select the number of cores in the system: Automatic mode, Three cores per processor, Two cores per processor, or One core per processor.
Node 0 Information	View Memory Information related to Node 0.

### **IDE Configuration**

This section is used to configure the IDE Devices. It will also display the detected information.

Figure	25: IE	DE Conf	iguration
--------	--------	---------	-----------

Aptio Setun U Advanced	tility - Copyright (C) 2018 American Me	gatrends, Inc.
IDE Configuration		0
SATA Port0	ST91603110CS (160.0GB)	
		→←: Select Screen.) ↑↓: Select Item
		Enter: Select. +/-: Change Opt. E1: Ganaral Halp
		F2: Previous Values. F3: Optimized Defaults.
		F4: Save Changes and Reset ESC: Exit
Version 2.1	1246. Copyright (C) 2018 American Meg	strends, Inc.

# **USB** Configuration

This section is used to configure the parameters of the USB Device.

#### Figure 26: USB Configuration



<b>BIOS Parameter</b>	Description
Legacy USB Support	<b>Enabled</b> – Enabled Legacy USB <b>Disabled</b> – Keep USB devices available only for EFI applications <b>Auto</b> – Disable support for legacy when no USB devices are connected
USB Mass Storage Driver Support	Enable or disable the support of the USB Mass Storage Driver.

# NCT61120 Super IO Configuration

This section is used to configure the parameters of the system super IO chip.

Aptio Setup Utility - C Advanced	Copyright (C) 2018 American	Megatrends, Inc.
NCT6112D Super IO Configuration		Set Parameters of Serial Port 1 (COMA)
NCT6112D Super IO Chip > Serial Port 1 Configuration > Serial Port 2 Configuration	NCT6112D	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit
Version 2.17.1246. C	Convright (C) 2018 American M	fegatrends. Inc.

BIOS Parameter	Description
Serial Port	Enable or disable the serial COM port.
RS485 Auto Flow Support	Enable or disable the RS485 auto flow support.

## NCT 6112D HW Monitor

This section is used to monitor hardware status.

#### Figure 27: NCT6112D Hardware Monitor

4	Aptio Setup Utility - ( Advanced	Copyright (C) 2018 American Me	gatrends, Inc.
Pc Health S CPU Temp SYS Temp VBAT VCORE VDDQ VDDQ SV3	Starus Starus erature erature	: +50.5 C : +40.0 C : +3.085 V : +0.816 V : +1.496 V : +5.038 V : +3.312 V	-+ Select Screen 14: Select Item Enter: Select +
			F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit
	Version 2.17.1246. 0	Copyright (C) 2018 American Meg	strends, Inc.

# NCT 6112D Super IO Features

This section is used to configure some control functions of the system super IO chip.

#### Figure 28: NCT 6112D Super IO Features

Aptio Setup Utility - Copyright (C) 2018 American Advanced	Megatrends, Inc.
NCT6112D Super IO Features Power-Loss State [Always off] WatchDog Count Mode [Second] WatchDog TimeOut Value 0	Control the status when Power loss occurs
	→ Select Screen ↑↓ Select Item Enter, Select +↑ Change Opt +↑: General Help F2: Previous Values F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit
Version 2.17.1246. Copyright (C) 2018 American M	egatrends, Inc.

BIOS Parameter	Description
WatchDog Count Mode	A WatchDog timer (WDT) is a hardware timer that automatically generates a system reset if the main program neglects to periodically service it. It is often used to automatically reset an embedded device that hangs because of a software or hardware fault. Use this menu to select the WatchDog Timer Unit: second or minute.
WatchDog TimeoutValue	Enter the value to set the Super IO WatchDog timer. 0 means disabled.

# **Network Stack Configuration**

This section is used to enable or disable network stack settings. The Network Stack Controls LAN1 & LAN2 (Also LAN 3 & LAN4 on large computing module).

#### Figure 29: Network Stack Configuration

Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc Advanced		
Network Stack	[Disabled]	Enable/Disable/UEFI Network/Stack →←: Select Screen ↑↓: Select Item Enter: Select. +/-: Change Opt. F1: General Help F2: Previous Value F3: Optimized Defaults F3: Save Changes and Reset ESC: Exit

Jersion 2, 17, 1246. Copyright (C) 2018 American Megatrends, In

BIOS Parameter	Description
Network Stack	Enable or disable the UEFI network stack. When Network Stack is set to enabled, the screen will be displayed as below.
Ipv4 PXE Support	When enabled, Ipv4 PXE boot supports. When disabled, the Ipv4 PXE boot option will not be available.
Ipv6 PXE Support	When enabled, Ipv6 PXE boot supports. When disabled, the Ipv6 PXE boot option will not be available.
PXE Boot Wait Time	Enter the wait time value to abort the PXE boot.
Media Detect Time	Enter the wait time in seconds to detect media.

# Chipset

This section configures relevant chipset functions.

### Figure 30: Chipset Screen

Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.						
Main	Advanced	Chipset	Boot	Security	Save & Exit	
<ul> <li>South I</li> <li>North I</li> <li>DISPL</li> </ul>	Bridge Bridge AY control					South Bridge Parameters
						++←: Select Screen ↑↓: Select Item Enter: Select ++: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit
	Versi	on 2.17.1246	. Copyrig	ht (C) 2018	American Megatr	ends, Inc.

BIOS Parameter	Description
OnChip SATA Channel	Enable or disable Serial ATA
OnChip SATA Type	Select OnChip SATA Type: Native IDE, AHCI, or Legacy IDE.
SD Mode	Enable or disable Secure Digital (SD) Mode configuration.
SD Host Controller Version	Select Secure Digital (SD) host controller version: SD2.0 or SD3.0.
HD Audio	HD Audio will be enabled if present, disabled otherwise.
	<b>Power On –</b> When Power returns after an AC power failure, the
	system will automatically power-on.
	<b>Power Off -</b> When power returns after an AC power failure, the
	system will remain off. You must press the Power button to power
	on the system.
Restore on AC Power Loss	Last State - When power returns after an AC power failure, the
	system will return to the state where you left off before power
	failure occurs. If the system's power is off when AC power failure
	occurs, it will remain off when power returns. If the system's
	power is on when AC power failure occurs, the system will power-
	on when power returns.
GPP2 Hotplug Mode Control	Enable or Disable GPP2 Hotplug Mode Control
GPP3 Hotplug Mode Control	Enable or disable GPP3 hotplug mode control.
DP0 Output Mode	Select NB PCIe to connect type (display device): EDP or Disabled.
Dp1 Output Mode	Select NB PCIe connect type (display device): DP or Disabled
Auto Backlight Dimming	Enable or disable dimming backlight by TB573D.
Minimum Dimming Level	Set the minimum dimming level control. The range is 1~20%.

# **Boot Configuration**

### Figure 31: Boot Configuration Menu

Main	Advanced.	Chipset.	Boot.	Security Save & Exit.	
Boot Coni Senip Pro- Bootup M Quiet Boo Boot Opti Boot Opti Boot Opti	figuration mpt Timeout umLock State : t., on Priorities on #1., on #2.,	a	پ [On [Di: " [P0	] sabled] s ST91603110CS] ndows Boot Manage 1.	Number of seconds to wait for setup activation key 65535(0xFFFF) means indefinite waiting
Hard Driv CSM para	e BBS Prioritie meters.,	5			→←: Select Screen., ↑↓: Select Item Enter: Select., +/-: Change Opt. F1: General Help F2: Previous Vahae, F3: Optimized Defaults., F4: Save Changes and Res ESC: Exit.,

BIOS Parameter	Description
Setup Prompt Timeout	Select the number of seconds to wait for the setup activation key. 65535(0xFFFF) denotes indefinite waiting.
Bootup NumLock State	This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.
Quiet Boot	Enable or disable the Quiet Boot option.
Boot Option #1/#2	Select the system boot order.

### Hard Drive BBS Priorities

Set the order of the legacy devices in this group.

Figure	32: Hard	<b>Drive BIOS</b>	<b>Boot S</b>	pecification

Aptio Setup Uti	lity - Copyright (C) 2018 American M	legatrends, Inc.,
Main Advanced., Chips	et. Boot. Security Save & Exit.	
Boot Configuration Setup Prompt Timeout Bootup NumLock State	با 1 [On].،	OpROM execution, boot options filter, etc
Quiet Boot.	[Disabled].	a.
Boot Option Priorities Boot Option #1.4 Boot Option #2.5	[P0: ST91603110CS]. [Windows Boot Manage].	а 
Hard Drive BBS Priorities CSM parameters	.1	<ul> <li>→←: Select Screen.</li> <li>↑↓: Select Item</li> <li>Enter: Select.</li> <li>+/-: Change Opt.</li> <li>F1: General Help</li> <li>F2: Previous Values.</li> <li>F3: Optimized Defaults.</li> <li>F4: Save Changes and Reset</li> <li>ESC: Exit.</li> </ul>
Version 2.17.	1246. Copyright (C) 2018 American Me	gatrends, Inc

BIOS Parameter	Description
Launch CSM	This field is used to enable or disable to launch of CSM.
Boot Option Filter	This option controls what device(s) the system will boot to.
Launch PXE OpROM Policy	This field controls the execution of UEFI and Legacy PXE OpROM.
Launch Storage OpROM Policy	This field controls the execution of UEFI and Legacy Storage OpROM.
Launch Video OpROM Policy	This field controls the execution of UEFI and Legacy Video OpROM.

# Security

#### Figure 33: Security

Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.				
Main Advanced Chipset	Boot Security	Save & Exit		
Password Description			Set Administrator Password	
If ONLY the Administrator's passwo then this only limits access to Setup only asked for when entering Setup. If ONLY the User's password is set, is a power on password and must be boot or enter Setup. In Setup the Us have Administrator rights. The password length must be	ord is set, o and is , then this e entered to ser will			
in the following range: Minimum length	3			
Maximum length	20		→←: Select Screen ↑↓: Select Item	
Administrator Password User Password			+/-: Change Opt. F1: General Help F2: Previous Values	
▶ Secure Boot menu			F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit	
Version 2.17.1246.	Copyright (C) 2011	American Megat	rends, Inc.	

BIOS Parameter	Description
Administrator Password	Set the administrator password.
User Password	Set the user password.
Secure Boot Menu	This section is used to configure customizable secure boot settings.
Secure Boot	Enable or disable secure boot. Secure Boot can be enabled if 1. System running in user mode with enrolled platform key (PK); 2. CSM function is disabled.
Secure Boot Mode	Select secure boot mode: standard or custom. Custom mode enables users to change image execution policy and manage secure boot keys.

### Key Management

This section enables experienced users to modify secure boot variables.

#### Figure 34: Key Management

Aptio Setup Utility - C	opyright (C) 2018 American M	fegatrends, Inc.
	Security	
Default Key Provision Enroll All Factory Default Keys Save All Secure Boot Variables	[Disabled]	Install Factory default Secure Boot Keys when System is in Setup Mode.
Platform Key (PK) > Delete PK > Set new PK	NOT INSTALLED	
Key Exchange Key (KEK) > Delete KEK > Set new KEK Armond VEV	NOT INSTALLED	
Authorized Signatures > Delete DB > Set new DB Arrowd DB	NOT INSTALLED	→←: Select Screen ↑J: Select Item Enter: Select +/-: Change Opt.
<ul> <li>Arboint DBX</li> <li>Set new DBX</li> <li>Aroad DBX</li> </ul>	NOT INSTALLED	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save Changes and Reset
Authorized TimeStamps > Delete DBT > Set new DBT > Append DBT	NOT INSTALLED	ESC: Exit
Version 2.17.1246. Co	opyright (C) 2018 American Me	gatrends, Inc.

<b>BIOS Parameter</b>	Description
Default Key Provision	Enable or disable to install factory default secure boot keys when the system is in setup mode. When enabled, a pop-up window will display. Select <b>Yes</b> and press <b>Enter</b> to install factory default keys.
Enroll All Factory Default Keys	Select <b>Yes</b> and press <b>Enter</b> to install ALL factory default keys, including PK, KEK, DB, DBX, and DBT. Change takes effect after reboot.
Set New PK	Select <b>Yes</b> and press <b>Enter</b> to set a new PK or select <b>No</b> and press <b>Enter</b> to load it from a file on external media.
Set new KEK	Select <b>Yes</b> and press <b>Enter</b> to set a new KEK or select <b>No</b> and press <b>Enter</b> to load it from a file on external media.
Append KEK	Select <b>Yes</b> and press <b>Enter</b> to set a new KEK or select <b>No</b> and press <b>Enter</b> to load it from a file on external media.
Set new DB	Select <b>Yes</b> and press <b>Enter</b> to set a new DB or select <b>No</b> and press <b>Enter</b> to load it from a file on external media.
Append DB	Select <b>Yes</b> and press <b>Enter</b> to set a new DB or select <b>No</b> and press <b>Enter</b> to load it from a file on external media.
Set new DBX	Select <b>Yes</b> and press <b>Enter</b> to set a new DBX or select <b>No</b> and press <b>Enter</b> to load it from a file on external media.
Set new DBT	Select <b>Yes</b> and press <b>Enter</b> to set a new DBT or select <b>No</b> and press <b>Enter</b> to load it from a file on external media.
Append DBT	Select <b>Yes</b> and press <b>Enter</b> to set a new DBT or select <b>No</b> and press <b>Enter</b> to load it from a file on external media.

### Save & Exit

#### **Menu Options**

#### Figure 35: Menu Options

Antio Setun Utility - Convright (C) 2018 American Megatrends, Inc.						
	Main	Advanced	Chipset	Boot	Security Save & Exit.	
	Save Char Discard C Restore D	nges and Reset hanges efaults				Reset the system after saving the Changes
						→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Value F3: Optimized Defaults F4: Save Changes and Reset ESC: Exit
Version 2.17.1246. Copyright (C) 2018 American Megatrends, Inc.						

BIOS Parameter	Description		
Save Changes and Reset	To save the changes, select this field and then press <b>Enter</b> . A dialog box will appear. Select Yes to reset the system after saving all changes made.		
Discard Changes	To discard the changes, select this field and then press <b>Enter</b> . A dialog box will appear. Select Yes to reset the system setup without saving any changes.		
Restore Defaults	<b>Enter</b> . A dialog box will appear. Select Yes to restore the default values of all the setup options.		

### Updating the BIOS

To update the BIOS, you will need the BIOS file and a flash utility. Please contact technical support or your sales representative for the files. The contact information is located at the end of this document.
# 1.4.7 Accessing the BIOS (Panel PC with AMD Ryzen)

## Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.

BIOS Information		Set the Date. Use Tab to
Project Name	SBC7824	switch between Date elements.
BIOS Version	B205.07A	Default Ranges: Year: 1998–9999
Memory Information		Months: 1-12
Total Memory	8192 MB (DDR4)	Days: Dependent on month
Memory Speed	2400 MHz	Range of Years may vary.
DIMM O	4096 MB	
DIMM 1	4096 MB	
Processor Information		
Name	AMD Ryzen Embedded	
	V1605B with Radeon Vega	
	Gf×	++: Select Screen
Speed	2000 MHz	↑↓: Select Item
ID	00810F10	Enter: Select
Number of Processors	8	+/-: Change Opt.
		F1: General Help
System Date	[Fri 08/14/2020]	F2: Previous Values
System Time	[14:13:59]	F9: Optimized Defaults
		F4: Save & Reset
		ESC: Exit
		In the state of th

<b>BIOS Parameter</b>	Description
System	Choose the system default language.
Language	
System Date	The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from 01 to 12. Date displays the date, from 01 to 31. Year displays the year, from 1980 to 2099.</year></date></month></day>
Time	The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.</second></minute></hour>

## AMD Chipset Settings

This section configures AMD CBS parameters.

#### Figure 36: AMD Chipset Setting

Aptio Setup Utili Advanced	ty – Copyright (C) 2020	American Megatrends, Inc.
Ac Loss Control DRAM ECC Enable > GFX Configuration > SATA Configuration Options > SB USB Configuration	[Always On] [Disabled]	Select Ac Loss Control Method **: Select Screen T1: Select Item Enter: Select +-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESG: Exit
Version 2.20.127	3. Copyright (C) 2020 Am	erican Megatrends, Inc.

<b>BIOS Parameter</b>	Description
Ac Loss Control	Select Ac Loss Control Method.
DRAM ECC Enable	Use this option to enable/disable DRAM ECC. The auto will set ECC to enable.
GFX Configuration	This field is used to configure UMA Mode and NB Azalia.
SATA Configuration	This section is used to configure the SATA controller and M.2-M.
SB USB Configuration	This section is used to enable/disable USB and Micro SD.

## Trusted Computing

Figure 37: Trusted Computing

This section is used to configure the Trusted Computing settings

TPM20 Device Found Firmware Version:	7.2	Enables or Disables BIOS support for security devic
vendor: Security Device Support	[Enable]	Device. TCG EFI protocol a
Pending operation	[None]	available.
		<pre>++: Select Screen f↓: Select Item Enter: Select</pre>
		+/-: Change Opt. F1: General Help
		F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESC: Exit

<b>BIOS Parameter</b>	Description
Security Device	Enable or disable BIOS support for a security device. O.S. will not show a security
Support	device. TCG EFI protocol and INT1A interface will not be available.
Pending Operation	Schedule an operation for the security device. Your computer will reboot during restart to change the state of the security device.
PCI-E Port Configuration	This section configures PCI-E Port parameters.

#### Introduction

## **PCI-E Port Configuration**

#### Figure 38: PCI-E Port Configuration

Aptio Setup Utility - Main	– Copyright (C) 2020 American	n Megatrends, Inc.
PCI-E Port Configuration Hotplug Mode Control(Mini PCIE) Hotplug Mode Control(M.2 - E)	[Enabled] [Enabled]	NB Root Port Hotplug Mode Control
		★: Select Screen T1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

<b>BIOS Parameter</b>	Description
Hotplug Mode	To onable/disable Hetplug Mode Control of Mini PCIe
Control(Mini PCIE)	To enable/disable hotping mode control of mini PCIe.
Hotplug Mode Control (M.2 -E)	To enable/disable Hotplug Mode Control of M.2-E.
Dimming Control	This section is used to configure displays and dimming.

## Advanced

Figure 39: Advanced

Aptio Setup Utij Advanced	lity – Copyright (C) 2020 A	American Megatrends, Inc.
DPO Output Mode DPI Output Mode Auto Backlight Dimming Hinimun Dimming Level	[Enabled] [Enabled] [Enabled] 10	LCD Panel display Enable/Disable ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.20.12	273. Copyright (C) 2020 Ame	erican Megatrends, Inc.

BIOS Parameter	Description
DP0 Output Mode	To enable/disable LCD panel display.
DP1 Output Mode	To enable/disable rear DP display.
Auto Backlight Dimming	To dim backlight by TB573D.
Minimum Dimming Level	Ranges from 1~20%.

## **ACPI Configuration**

This section configures system ACPI parameters.

# Advanced Hake On PCIE Nake on RTC from S5 Disabled] Hake on RTC from S5 PDisabled] PDIsabled] Hake on RTC from S5 PDIsabled] PD

BIOS Parameter	Description
Wake on PCIe	Enable/disable integrated LAN to wake the system
Wake on RTC from S5	Resume by RTC Alarm after S5 shutdown
NCT6112D Super IO	This section is used to configure the parameters of the system
Configuration	super IO chip.

#### Figure 40: ACPI Configuration

## NCT611D Super IO Configuration

#### Figure 41: NCT611D



BIOS Parameter	Description
WatchDog Timer Unit	Select WatchDog Timer Unit by second or minute.
SuperIO WatchDog Timer	Disable the timer by value 0 or set another timeout value to enable the timer.
Serial Port 1 Configuration	Enable or disable serial port 1(COMA).
Serial Port 2 Configuration	Enable or disable serial port 2(COMB). Switch Auto Flow and Full-Duplex Mode of RS485.
NCT6112D HW Monitor	Monitor hardware status.

## Serial Port Console Redirection

#### Figure 42: Serial Port Console Redirection

Aptio Setup Utili Advanced	ty – Copyright (C) 2020 A	imerican Megatrends, Inc.
COM1 Console Redirection ▶ Console Redirection Settings	[Disabled]	Console Redirection Enable or Disable.
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.20.127	3. Copyright (C) 2020 Ame	rican Megatrends, Inc.

BIOS Parameter	Description
Console Redirection	Enable / disable console direction.
Console Redirection Settings	Specify how the host computer and the remote one (which the user is using) will exchange data. Both computers should have the same or compatible settings. Please refer to the next page.

## Serial Port Console Redirection

#### Figure 43: Serial Port Console Redirection

Aptio Setup U1 Advanced	tility – Copyright (C) 2020	American Megatrends, Inc.
COM1 Console Redirection Settings Terminal Type Bits per second Data Bits Parity Stop Bits Flow Control	s [ANSI] [115200] [8] [None] [1] [None]	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Version 2.20	1273. Copyright (C) 2020 An	merican Megatrends, Inc.

<b>BIOS Parameter</b>	Description
	VT100 – ASCII CharSet
ANSI	VT100+ Extends VT100 to Support color and function keys
	VT-UTF8 - Uses UTF8 encoding to map Unicode chars onto 1 or more bytes
	bytes.
Bits per Second	9600 / 19200 / 38400 / 57600 / 115200 - Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/ stop signals.
Data Bits	7/8

		<b>Even</b> - Parity bit is 0 if the num of 1's in the data bits is even.
Parity	A parity bit can be sent with the data bits to detect some transmission errors.	<b>Odd</b> - Parity bit is 0 if the num of 1's in the data bits is odd.
		<b>Mark</b> - Parity bit is always 1
		<b>Space</b> - Parity bit is always 0. Note: Mark and Space parity do not allow for error detection.
Stop Bits	<b>1/2</b> - Stop bits indicate the end of a serial data packet(A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.	
Flow Control	None / Hardware RTS/CTS - Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.	

## **CPU Configuration**

This section is used to configure the CPU.

#### Figure 44: CPU Configuration

Advanc	Aptio Setup Utility – Copyright ( <mark>ed</mark>	C) 2020 American	Megatrends, Inc.
PSS Support NX Mode SVM Mode	[Enabled] [Enabled] [Enabled]		Enable/disable the generation of ACPI_PPC, _PSS, and _PCT objects. ++: Select Screen T4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
	Version 2.20.1273. Copyright (C)	2020 American Me	egatrends, Inc.

BIOS Parameter	Description
PSS Support	Enable or disable the generation of ACPI _PPC, _PSS, and _PCT objects.
NX Mode	Enable or disable the No-execute page protection function.
SVM Mode	Enable or disable CPU Virtualization

## **USB** Configuration

This section is used to configure the parameters of a USB device.

#### Figure 45: USB Configuration

Aptio Setup Utility – Advanced	Copyright (C) 2020 American	Megatrends, Inc.
USB Configuration Legacy USB Support XHCI Hand-off USB Mass Storage Driver Support	[Enabled] [Enabled] [Enabled]	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected.
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.20.1273. C	opyright (C) 2020 American M	legatrends, Inc.

BIOS Parameter	Description
Legacy USB Support	Enable or disable Legacy USB support.
XHCI Hand-off	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Enable or disable the support of the USB Mass Storage Driver.

## **CSM Configuration**

Enable or disable CSM options, Option ROM execution settings, etc.

#### Figure 46: CSM Configuration



BIOS Parameter	Description
CSM Support	Enable or disable CSM support

## **Network Stack Configuration**

This section is used to enable or disable network stack settings.

#### Figure 47: Network Stack Configuration

Aptio Setup Ut Advanced	ility — Copyright (C) 2020 A	American Megatrends, Inc.
Network Stack Ipv4 PXE Support Ipv5 PXE Support PXE boot wait time Media detect count	[Enabled] [Disabled] [Disabled] 0 1	Enable/Disable UEFI Network Stack ++: Select Screen T1: Select Item
		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESC: Exit

BIOS Parameter	Description
Network Stack	Enable or disable the UEFI network stack. When Network Stack is set to enabled, the below settings will be shown.
Ipv4 PXE Support	When enabled, Ipv4 PXE boot supports. When disabled, Ipv4 PXE boot support will not be available.
Ipv6 PXE Support	When enabled, Ipv6 PXE boot supports. When disabled, Ipv6 PXE boot support will not be available.
PXE Boot Wait Time	Enter the wait time value for pressing ESC to abort the PXE boot
Media Detect Count	The number of times the presence of media will be checked. Use either +/- or numeric keys to set the value.

## Security

Figure 48: Security

Aptio Setup Utility – Main Advanced <mark>Security</mark> Boot Sav	Copyright (C) 2020 American e & Exit	Megatrends, Inc.
Password Description If ONLY the Administrator's password	is set,	Set Administrator Password
then this only limits access to Setu, only asked for when entering Setup. If ONLY the User's password is set, is a power on password and must be en boot or enter Setup. In Setup the Us		
have Administrator rights. The password length must be in the following range:		
Minimum length Maximum length	3 20	
Administrator Password		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt.
▶ Secure Boot		F1: General Help F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.20.1273. Co	pyright (C) 2020American M	egatrends, Inc.

BIOS Parameter	Description
Administrator Password	Set the administrator password
Secure Boot	Secure boot configuration

### Secure Boot menu

This section is used to configure customizable secure boot settings.

# Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc. Secure Boot Secure Boot Secure Boot Mode Secure Boot Mode Restore Factory Keys Reset To Setup Mode Key Management \*\*: Select Screen 11: Select Item The Restore Factory Keys Reset To Setup Mode Key Management \*\*: Select Screen 11: Select Item Enter: Select \*/-: Change Opt. Fit: Select Screen 11: Select Item Enter: Select \*/-: Change Opt. Fit: Select Screen 11: Select Item Enter: Select \*/-: Change Opt. Fit: Select Screen 11: Select Item Enter: Select \*/-: Change Opt. Fit: Seve & Reset Sc: Exit

BIOS Parameter	Description	
Secure Boot	Enable or disable secure boot. Secure Boot features are active if Secure Boot is enabled, Platform Key(PK) is enrolled and the System is in User mode.	
	The mode change requires a platform reset.	
Secure Boot Mode	Select secure boot mode: Standard or Custom. In the Custom mode, secure boot policy variables can be configured by a physically present user without full authentication.	
Restore Factory Keys	Force System to User mode. Install factory default Secure Boot key databases.	
Reset to Setup Mode	Delete all Secure Boot key databases from NVRAM	
Key Management	Enable expert users to modify Secure Boot Policy variables without full authentication. See the next page for details.	

#### Figure 49: Secure Boot Menu

## Secure Boot menu

Aptio Set	up Utility – Copyright (C) 2020 <mark>ty</mark>	American Megatrends, Inc.
Vendor Keys	Valid	Install factory default Secure Boot keys after the platform
Factory Key Provision Restore Factory Keys Reset To Setup Mode Export Secure Boot vari Enroll Efi Image	reset and while the System is in Setup mode	
Device Guard Ready ▶ Remove 'UEFI CA' from D ▶ Restore DB defaults	ЪВ	
Restore DB defaults         Secure Boot variable   Size  Keys  Key Source         Platform Key(PK)       0  0  No Keys         Key Exchange Keys       0  0  No Keys         Authorized Signatures       0  0  No Keys         Forbidden Signatures       0  0  No Keys         Authorized TimeStamps       0  0  No Keys         OSRecovery Signatures       0  0  No Keys		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESC: Exit
Version	2.20.1273. Copyright (C) 2020 A	merican Megatrends, Inc.

BIOS Parameter	Description
Factory Key Provision	Install factory default Secure Boot Keys after the platform reset and while the System is in Setup mode.
Restore Factory Keys	Force System to User mode. Install factory default Secure Boot key databases.
Reset to Setup Mode	Delete all Secure Boot key databases from NVRAM.
Export Secure Boot Variables	Export current secure boot variables.
Enroll Efi Image	Allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database. (dB)
Device Guard Ready-	
Remove 'UEFI CA' from DB	Device Guard ready system must not list 'Microsoft UEFI CA' Certificate in Authorized Signature databases (dB)
Restore DB defaults	Restore DB variable to factory defaults.

### **Secure Boot Variables**

Figure 50: Secure Boot Variables

Aptio Setup Util Security	ity – Copyright (C) 2020 Ameri	ican Megatrends, Inc.
Vendor Keys	Valid	Enroll Factory Defaults or
Factory Key Provision > Restore Factory Keys > Reset To Setup Mode > Export Secure Boot variables > Enroll Efi Image Device Guard Ready > Berging UEST Col form DB	[Disabled]	1.Public Key Certificate: a)EFI_SIGNATURE_LIST b)EFI_CERT_X509 (DER) c)EFI_CERT_X509 (DER) d)EFI_CERT_SHAXXX 2.Authenticated UEFI Variable 3.EFI PE/COFF Image(SHA256) Key Saureet
<ul> <li>Remove UEFICA from DB</li> <li>Restore DB defaults</li> </ul>		Factory,External,Mixed
Secure Boot variable   Size  K > Platform Key(PK)   0  > Key Exchange Keys   0  > Authorized Signatures   0  > Forbidden Signatures   0  > Authorized TimeStamps   0  > DsRecovery Signatures   0	eys  Key Source 0  No Keys 0  No Keys 0  No Keys 0  No Keys 0  No Keys 0  No Keys	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Reset ESC: Exit</pre>
Version 2.20.12	73. Copyright (C) 2020 America	an Megatrends, Inc.

Enroll Factory Defaults or load certificates from a file:

- 1. Public Key Certificate:
  - a) EFI\_SIGNATURE\_LIST
  - b) EFI\_CERT\_X509 (DER)
  - c) EFI\_CERT\_RSA2048 (bin)
  - d) EFI\_CERT\_SHAXXX
- 2. Authenticated UEFI Variable
- 3. EFI PE/COFF Image(SHA256)

Key Source:

Factory, External, Mixed

## Boot

.

Figure 51: Boot

Boot Configuration	Number of concerts to wait for
Setup Promot Timeout ION Bootup NumLock State ION Quiet Boot IEnal Boot Option Priorities	<pre>http://www.actions.com/actions/com/ac</pre>
Version 2-20, 1273 - Conucid	(C) 2020 American Mesatonds, Toc

BIOS Parameter	Description	
Setup Prompt Timeout	Select the number of seconds to wait for the setup activation key. 65535(0xFFFF) denotes indefinite waiting.	
Bootup NumLock State	This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.	
Quiet Boot	Enable or disable the Quiet Boot option.	
Boot Option Priorities	Select the system boot order	

#### Save & Exit

Figure 52: Save & Exit'

Aptio Setup Utility – Copyright (C) 2020 American Main Advanced Security Boot <mark>Save &amp; Exit</mark>	Megatrends, Inc.
Naih Advanced Security Boot Save & Exit Save Options Save Changes and Reset Discard Changes and Exit Default Options Restore Defaults	Reset the system after saving the changes. ++: Select Screen 14: Select Item Enter: Select
	+/-: Change Upt. F1: General Help F2: Previous Values F9: Optimized Defaults F4: Save & Reset ESC: Exit

<b>BIOS Parameter</b>	Description
Save Changes and	
Reset	To save the changes, select this field and then press <enter>. A dialog box will appear. Select Yes to reset the system after saving all changes made.</enter>
Discard Changes	
and Exit	To discard the changes, select this field and then press <enter>. A dialog box will appear. Select Yes to reset the system setup without saving any changes</enter>
Restore Defaults	To restore and load the optimized default values, select this field and then press
	<enter>. A dialog box will appear. Select Yes to restore the default values of all the setup options</enter>
Updating the	
BIOS	To update the BIOS, you will need the new BIOS file and a flash utility. Please contact technical support or your sales representative for the files.

## **Updating the BIOS**

To update the BIOS, you will need the new BIOS file and a flash utility. Please contact technical support or your sales representative for the files.

Note: BIOS SPI ROM

- 1. Due to safety concerns, the BIOS (SPI ROM) chip cannot be removed from this system board and used on another system board of the same model.
- 2. The BIOS (SPI ROM) on this system board must be the original equipment from the factory and cannot be used to replace one which has been utilized on other system boards.
- 3. If you do not follow the methods above, the Management Engine will not be updated and will cease to be effective.Installation of Drivers

# 1.5 RXi - Web Panel



An Emerson display that provides the ability to view web-hosted interfaces and dashboards.

## 1.5.1 Primary Technical Features

- Linux Yocto OS Version 4.9.88
- HTML5 Capability

## 1.5.2 Display Architecture Options



#### Figure 53: Backing Module and Screen Compatibility

## 1.5.3 Configuration and Setup of RXi - Web Panel

## **Adjusting Screen Sensitivity**

#### **TouchTool Steps**

- 1. Open Chromium browser and point to **chrome://apps** (Figure 54).
- 2. Select **Touch Tools** for touchpoint and screen sensitivity adjustment.
- 3. Select how many touchpoints are needed (Figure 55).
- 4. Set Sensitivity level appropriately based on the touchpoint (Figure 56).

#### Figure 54: Point Chromium Browser to chrome://app



Figure 55: Touch Tool



#### Figure 56: Sensitivity Level



#### Ambient Light Sensor (ALS)

The RXi Web Panel uses a photodiode to sense the ambient light and in turn, the microcontroller reads the ALS, adjusting the LCD backlight.

The ALS function can be switched on or off by the mainboard

- 1. Enable ALS ON to disable manual dimming control.
- 2. Alternatively, disable ALS ON to enable the manual dimming control.

#### Figure 57: Enabling/Disabling ALS from the Mainboards



## **Adjusting Screen Brightness**

- 1. Open Chromium browser and point to **chrome://apps** (Figure 54).
- 2. Select Brightness Setup from the menu to adjust backlight dimming or ALS on/off control.

Note: The manual adjustment bar will only be shown when ALS is off.

3. The dimming level can be adjusted by inputting a number in the text field and clicking the **Set** button or clicking and dragging the adjustment bar (Figure 58).

Figure 58: Turn on ALS



**Note:** There is an internal setting for the minimum dimming level, which is 10% by default. When adjusting the dimming level below 10%, no change will be evident.

## **User Password Settings**

The user/root default password is **EMrootroot.** Here are instructions to change the password.

1. Click the user password icon.

#### Figure 59: User Password Icon



2. Enter the default (old) and new password then click the Set user password or Set root password button to submit the new password.



Figure 60: Set User Password

#### **Network Setup**

- 1. Open Chromium browser and point to **chrome://apps**
- 2. Select Network Setup
- 3. Assign values to the empty fields to setup your network
- 4. Click the **Setup** button to complete the setup.

#### Figure 61: Network Setup



## **Date and Time Settings**

- 1. Open Chromium browser and point to chrome://apps
- 2. Select Network Setup
- 3. Manually set the date and time and click Set Date & Time.

#### Figure 62: Date and Time Setup

/ 🛱 chrome-extension://kccii 🧭
C * date & time setup   chrome-extension://kociihimnola
Date and Time Setup
CONTRACTOR DE LA CONTRACT
Manual Setup:
12/03/2020
08:11 AM
Set date&time
Auto Setup:
Connect ntp server
Timezone Setup:
(GMT) Western Europe Time, London, Lisbon, Casablanca
Set timezone
Connecting to native messaging host com.google.chrome.datetime

# Section 2: Specifications

# 2.1 RXi - Industrial Monitor

	Size (inch)	7"	10"	12"	15"	19"	24"
	Resolution	1024 x 600 WSVGA	1280 x 800 WXGA		1920 x 1080 Full HD		
	Format	Widescreen (16:10) (16:0)			Widescreen (16:9)		
	Orientation	Landscape					
	Reading Angle (°)	150 (H) /         170 (H) / 170         176 (H) / 176         170 (H) / 170         178 (H)           145 (V)         (V)         (V)         (V)         178 (H)		) / 178 (V)			
Display	Display Off-Color		Black				
	Contrast	800:1		1000:1	800:1	1000:1	5000:1
	Brightness (cd/m2)	500		400	450	350	300
	Brightness with Outdoor SLR Screen (cd/m2)	1000			N/A		
	MTBF Backlighting	ng 50,000 h (at 25 °C)					
Touchscreen	Technology		Pro	jected Capacitive	Touch (PCT/PC/	AP)	
Touchscreen	Touch Sensor			Multi-touch (	Ten-Point)		
	Port 1			1 x HD	MI-In		
	Port 2			1 x Display	/ Port-In		
Interfaces	Port 3	1 x Display Port-Out					
	Port 4	(MST - Daisy Chain)					
	Port 5	1 x USB Input (For Touch)					
Status Indicators	Front Bezel Tri- color LED	Amber/Green/Red					
		+24 VDC ±10%					
Power-Supply	Voltage (V)	(3-Pin Connector, Isolated, use 28-14AWG (0.2-1.5mm²) wire rated 90C, 1.7 in-lbs (0.19Nm) torque)					
Power Consumption	Maximum Wattage (W)	5 W	11 W	17 W	15 W	22 W	30 W
Protection-	Front-Side	IP66 & Type 4/4X (When Installed to a suitable Wall/Panel)					
Class Back-Side IP20					0		
Design	Housing	Aluminum Die Casting (Front)					
	Operating Temperature	-20 °C to +65 °C					
	Storage Temperature	-30 °C to +70 °C					
Environment	Operating Humidity	85% RH (non- condensing) @ 30 °C					
	Operating Altitude	10000 ft. (3.000 m)					
	Vibration	1 Grms / 5 ~ 500Hz (Random) / Operation IEC 60068-2-64 10 G peak acceleration (11 msec. duration)/operation IEC 60068-2-27					

	Size (inch)	7"	10"	12"	15"	19"	24"			
Compliance	Certifications	UL and cUL Class 1 Division 2: Programmable Controllers for Use in Hazardous Locations (UL/CSA 61010-2-201, UL 121201, CSA C22.2 No. 213) IECEx & ATEX Zone 2/22 Hazardous Locations(IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60079-31) IECEE CB Scheme (IEC 61010-2-201) UL TYPE 4 & 4X, IP66 (ANSI/IEC 60529) Marine: DNV, ABS, BV								
	Panel Cutout Dimensions (mm)	183.5 (W) 128.5 (H)	255.5 (W) 174 (H)	317 (W) 214.5 (H)	398 (W) 245.5 (H)	482 (W) 297 (H)	581 (W) 360 (H)			
Mounting	VESA Mounting		100 x 100							
Mounting	Hardware Included		Mounting Clamps							
	Net Weight (kg)	2.0	2.6	3.8	5.1	6.9	9.0			
Physical Specification	Dimensions (mm)	192 (W) 137 (H) 65 (D)	267 (W) 186.2 (H) 65 (D)	329.1 (W) 226.8 (H) 66 (D)	410.2 (W) 257.6 (H) 65 (D)	500 (W) 315 (H) 70 (D)	600 (W) 382 (H) 71 (D)			

# 2.1.1 RXi - Industrial Monitor Motherboard Specifications

ltem	Description
Board Size	170 x 113mm
Scalar IC	Realtek RTD2556T-CG
Input	1 x HDMI Input 1 x Display Port (DP) Input (DP1) 1 x USB 2.0 (Type B)
Output	1 x Support up to 24-bit LVDS FULL HD panel interface 1 x Display Port (DP) Output (DP2) 1 x Line-Out (Audio Jack)
Resolution	Up to 1920 x 1080@60Hz for LVDS Up to 1920 x 1080@60Hz for Display Port
Power Input	DC24V±20%
Temperature	Operating: -20°C to 65°C Storage: -30°C to 85°C
Humidity	10%-90%, non-condensing, operating
EMI/EMS	Meet CE/FCC class A

# 2.2 RXi - Panel PC

# 2.2.1 Panel PC (Base Model)

	Display Size	7"	10"	12"	15"	19"	24"		
	Resolution	1024 x 600 WSV GA		1920 x 1080 Full HD					
	Format	V	Videscreen (1	6:10)	V	Videscreen (16:9	ə)		
	Orientation				Landscape				
	Reading Angle (°)	150 (H) / 170 (H) / 145 170 (V) (V)		176 (H) / 176 (V)	170 (H) / 170 (V)	178 (H) / 178 (V)			
	Display Off-Color				Black				
Display	Contrast	8	00:1	1000:1	800:1	1000:1	5000:1		
	Brightness (cd/m2)	500 (1000 with Outdoor SLR Screen)		400 (1000 with Outdoor SLR Screen)	450 (1000 with Outdoor SLR Screen)	350	300		
	Colors			<u> </u>	16.2 Million		•		
	MTBF Backlighting			50,	),000 h (at 25°C)				
	Backlight			LED, Dimmable via Software					
	Chipset	AMD Embedded G-Series SOC			AMD Embe Embec	edded G-Series S Ided V1000-Seri	OC or AMD ies SoC		
	Processor GX-210HL		210HL		GX-412G	C or V1404I			
Drococcor	# of cores/TDP	2/7W			4/1	15W			
FIOCESSO	CPU frequency/L2 Cache	1.0Ghz/1MB			GX-412GC: 1.2GHz/2MB V1404I: 2.0/2MB				
	GPU frequency	26	7Mhz		GX-412GC: 300MHz V1404I: 2400MHz				
Memory	Capacity	4GB or 8GB DDR3L (Soldered with ECC, -40°C ∼ 85°C)			GX-412GC: 4GB or 8GB DDR3L (Soldered with ECC, -40°C ~ 85°C) V1404I: 8GB/ 16GB DDR4 (Soldered with ECC, - 40°C ~ 85°C)				
	Internal	32 / 64 ML (SATA SI 8	4 / 128GB .C SSD im, -40°C ~ .5°C)	GX-412GC: V1404	X-412GC: 64 / 128GB MLC SSD (SATA Slim, -40°C ~ 85°C) V1404I: 128 / 256 / 512GB M.2 MLC SSD (SATA III)				
Storage	External Slot	1 x Exte	rnal Micro SD, Slot (up to 32Gl	/ SDHC Card B)	GX-412GC: 1 x External Micro SD/ SDHC Card Slot (up to 32GB) V1404I: 1 x Micro SD Slot, 1 x Microchip USB2642-I				
Watchdog Timer	Timer Levels	255 timer levels, set up by software							

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	Display Size	7'	10"	12"	15"	19"	24"		
Operating Control	Method				Touch				
Touchscroop	Technology	Projected Capacitive Touch (PCT/PCAP)							
Touchscreen	Touch Sensor				Multi-touch (Ten-Point)				
	Port 1	2 x 10/100/1000 4 x 10/100/1000							
	FUILT	Base T E	thernet RJ45		Base T Eth	nernet RJ45			
		1 x RS	5-232 COM Por	t (5-Pin Conn	ector, Isolated, use 2	4-16AWG (0.2-	1.3mm²),		
	Port 2			strij	o-length 10mm)				
Interfaces		1 x RS-485 COM Port (5-Pin Connector, Isolated, use 24-16AWG (0.2-1.3mm²), strip-length 10mm)							
	Port 3	2 x USB 3.0 (Type-A) 2 x USB 3.0 (Type-A) 2 x USB 2.0 (Type-A)							
	Port 4			1	x DisplayPort				
	Port 5			1 x Mic In	(Mono) (3.5mm Jac	k)			
	Port 6			1 x Line Ou	t (Stereo) (3.5mm Ja	ck)			
Status Indicators	Front Bezel Tri-color LED			Amt	oer / Green / Red				
	On-board Buzzer		Yes (8	85dB sound le	evel with 80mA mea	in current)			
Power-Supply				4	+24VDC ±10%				
	Voltage [V]	(3-Pin Connector, Isolated, use 28-14AWG (0.2-1.5mm²) wire rated 90C, 1.7 in-lbs (0.19Nm) torque)							
Power	Maximum	1 / \\/	10.14/	10.14	/ 10.1/	10.14/	42.14/		
Consumption	Wattage [W]	14 VV	19 00	19 0	1900	19 VV	43 W		
Protection-	Front-Side	IP66 & Type 4/4X (When Installed to a suitable Wall/Panel)							
Class/Installation	Back-Side	IP20/Open Type product for mounting in an ultimate enclosure Pollution Degree 2 environment							
Operating System	Installed Standard	Windows 10 IOT Enterprise LTSC							
Coffeena Toola	Tool 1	Secure & Trusted Boot Capability							
Software roois	Tool 2		DHCP-Clien	t, Web Brow	ser (IE or FireFox), Ja	va JRE Capabili <sup>,</sup>	a JRE Capability		
Secure & Trusted Boot	ltem 1			On	-Board TPM2.0				
	Housing	Aluminum Die Casting (Front)							
Decian	Construction				Modular				
Design	Туре	(Detachable Modules; Computer, Monitor, Touch Display, DIO)							
	Cooling		Nat	ural Convect	ion (Fanless Passive	Cooling)			
	Operating Temperature			-2	20°C to +65°C				
	Storage Temperature			-3	30°C to +70°C				
Environmental	Operating			85% PH (nc	n- condensing) @ 3	٥°C			
Environmental	Humidity			83% KH (HC	m-condensing) @ 5	00			
	Operating Altitude			100	00 ft. (3.000 m)				
	Vibration		1Grms / 5 10G peak accel	5 ~ 500Hz (Ra eration (11 m	ndom) / Operation I sec. duration)/opera	EC 60068-2-64 ition IEC 60068-	-2-27		
		183.5	255.5	317	398	482	581		
	Panel Cutout	(W)	(W)	(W)	(W)	(W)	(W)		
	Dimensions (mm)	128.5	174	214.	5 245.5	297	360		
Mounting		(H)	(H)	(H)	(H)	(H)	(H)		
mounting	VESA Mounting		75 x 75			100 x 100			
	Hardware			Mc	Mounting Clamps				
	Included								
Physical	Net Weight (kg)	2.0	2.6	3.8	5.1	6.9	9.0		

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	Display Size	7"	10"	12"	15"	19"	24"		
Specification				6kg	7kg	9kg	11kg		
	Dimonsions	192(W)	267(W)	329.1(W)	410.2(W)	500(W)	600(W)		
	(mm)	137(H)	186.2(H)	226.8(H)	257.6(H)	315(H)	382(H)		
	(11111)	65(D)	65(D)	66(D)	65(D)	70(D)	71(D)		
Certifications	Certifications	U UL and cUL IECEx & A	L and cUL Info Class 1 Divisio (UL/CSA 6 NTEX Zone 2/2 I U	rmation Techno n 2: Programma 51010-2-201, UI 2 Hazardous Lo IEC/EN ECEE CB Schem L TYPE 4 & 4X, IF	logy Equipment ble Controllers fo 121201, CSA C2 cations(IEC/EN 6 60079-31) e (IEC 61010-2-2 966 (ANSI/IEC 60	(UL/CSA 6236 or Use in Hazar 22.2 No. 213) 50079-0, IEC/ 201) 529)	58-1) dous Locations EN 60079-7,		
	Certifications Coming	Marine: DNV, ABS, BV							

# 2.2.2 Panel PC Motherboard Specifications

Item	Description					
Board Size		170mm x 113mm				
	AMD® Embedded G-Series					
CPU Support	AMD® GX-210HL	., Dual-Core, 1M Cache, 1.0GHz, 7W				
	AMD® GX-412GC,	ion  AMD® Embedded G-Series  AMD® GX-210HL, Dual-Core, 1M Cache, 1.0GHz, 7W  AMD® GX-210HL, Dual-Core, 1M Cache, 1.2GHz, 15W  Onboard 4GB/8GB DDR3L Memory with ECC Supports Single Channel DDR3 1066/1333MHz  AMD Radeon™ R3E GPU  DirectX® 11.2, OpenCL 4.3, OpenCL™ 1.2 graphics support  1 x DP++  1 x LVDS  DP++: resolution up to 4096x2160 @ 30Hz LVDS: dual channel 24-bit, resolution up to 1920x1200 @ 60Hz  AMI SPI 64Mbit  1 x Micro SD  1 x SATA 3.0 (7+15pin)  2 x Intel® 1210IT, -40 to 105°C PCIe (10/100/1000Mbps)  2 x USB 3.0  1 x Micrin  1 x LVDS  2 x USB 3.0  1 x Micrin  1 x LVDS LCD Panel Connector  1 x AIO/DIO 1x30pin Connector (JAE TX24-30R-10ST-H1E)  CR2032 Coin Cell  Codec: 92HD73C  1 x Mini PCIe (PCIe/USB 2.0)  1 x M.2 E key 2230 (PCIe/USB 2.0)  TPM2.0  System Reset  Programmable via Software from 1 to 255 Seconds/Minutes  Operating: -30 to 85 °C  Operating: 10 to 90% RH  Storage: : 10 to 90% RH				
Momory Support	Onboard 4GE	3/8GB DDR3L Memory with ECC				
Memory Support	Supports Singl	e Channel DDR3 1066/1333MHz				
	AMD Radeon <sup>™</sup> R3E GPU					
	DirectX® 11.2, Oper	nGL 4.3, OpenCL <sup>™</sup> 1.2 graphics support				
Craphics		1 x DP++				
Graphics		1 x LVDS				
	DP++: resolu	ution up to 4096x2160 @ 30Hz				
	LVDS: dual channel 24	-bit, resolution up to 1920x1200 @ 60Hz				
BIOS		AMI SPI 64Mbit				
<u>Classica</u>	1 x Micro SD					
Storage	1 x SATA 3.0 (7+15pin)					
Ethernet	2 x Intel® I210IT, -40 to 105°C PCIe (10/100/1000Mbps)					
	2 x USB 3.0	1 x Mic-in				
Outside 1/O	1 x RS-232	2 x GbE (RJ-45)				
Outside I/O	1 x RS-485	1 x DP++				
	1 x Line-out	1 x Power Button				
Internal I/O	1 x LVDS LCD Panel Connector					
internari/O	1 x AIO/DIO 1x30pin Connector (JAE TX24-30R-10ST-H1E)					
Battery		CR2032 Coin Cell				
Audio		Codec:92HD73C				
Evenneion	1 x Mini PCIe (PCIe/USB 2.0)					
схранзюн	1 x M.2 E key 2230 (PCIe/USB 2.0)					
Security		ТРМ2.0				
Watch dog Timor		System Reset				
watchdog filler	Programmable via Software from 1 to 255 Seconds/Minutes					
Tomporatura	Op	perating: -30 to 85 °C				
remperature	S	torage: -30 to 85 °C				
llumidite.	Op	erating: 10 to 90% RH				
	St	orage: 10 to 90% RH				
OS Support	Window	rs 10 IoT Enterprise (64-bit)				

# 2.2.3 Panel PC (with AMD Ryzen)

	Display Size	7"	10"	12"	15"	19"	24"	
	Resolution	NA	N	٩	1920 x 1080 Full HD			
	Format		NA		Widescreen (16:9)			
	Orientation			Landscape				
	Reading Angle (°)	NA	NA	176 (H) / 176 (V)	170 (H) / 170 (V) 178 (H) / 178 (V		178 (V)	
	Display Off-Color			В	lack			
	Contrast	Ν	IA	1000:1	800:1	1000:1	5000:1	
Display	Brightness (cd/m2)	NA		400 (1000 with Outdoor SLR Screen)	450 (1000 with Outdoor SLR Screen)	350	300	
	Colors			16.2	Million			
	MTBF Backlighting			50,000	h (at 25°C)			
	Backlight		LED, Dimmable via					
	Chipset		AN	/ID® Embedde	d V1000-Series S	οC		
	Processor	Ν	IA		V14	1041		
Drococcor	# of cores/TDP	Ν	IA		4/1	5W		
Processor	CPU frequency/L2				2.0~2.00			
	Cache	N	A	2.0~3.6GHz/2MB				
	GPU frequency	Ν	IA	2400MHz				
Memory	Capacity	8GB/ 16GB DDR4 (Soldered with ECC, -40 °C ~ 85 °C)						
	Internal	NA 1 x M.2 M Key 2280 size with (w/PClex4 and SATA III)						
Storage	External Slot			1 x Mic 1 x Microch	ro SD Slot nip USB2642-I			
Watchdog Timer	Timer Levels		25	5 timer levels,	, set up by softwa	are		
Operating Control	Method			Т	ouch			
T	Technology	Projected Capacitive Touch (PCT/PCAP)						
Touchscreen	Touch Sensor	Multi-touch (Ten-Point)						
	Dort 1		00/1000					
	PULL	Base T Ethernet RJ45						
Interfaces	Port 2	1 x RS-232 CO 1 x RS-485	M Port (5-Pin Co COM Port (5-Piı	onnector, Isola 10 Connector, Is lenat	ted, use 24-16AV )mm) solated, use 24-10 n 10mm)	VG (0.2-1.3mm 6AWG (0.2-1.3r	²), strip-length nm²), strip-	
interfaces	Port 3	Ν	IA		2 x USB 3.0 2 x USB 2.0	0 (Type-A) 0 (Type-A)		
	Port 4			1 x DisplayPort				
	Port 5			1 x Mic In (Mo	no) (3.5mm Jack)	)		
	Port 6		1	x Line Out (Ste	ereo) (3.5mm Jac	k)		
	Front Bezel			Amharl	Croop/Bod			
Status Indicators	Tri-color LED			Amber /	Green / Ked			
	On-board Buzzer		Yes (85d	B sound level	with 80mA mean	i current)		
Dowor Currel	Voltage [V]			+24V	DC ±10%			
Power-Supply	voitage [V]	(3-Pin Connector, Isolated, use 28-14AWG (0.2-1.5mm²) wire rated 90C, 1.7 in-lbs (0.19Nm) torque)						

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	Display Size	7"	10"	12"	15'	19"	24"		
Power Consumption	Maximum Wattage [W]	NA	NA	49 W	52 W	50 W	64 W		
Ducto ation Class	Front-Side		IP66 & Type 4	4X (When Ins	talled to a suitab	le Wall/Panel)			
Protection-Class	Back-Side			l	P20				
Operating System	Installed Standard		Windows 10 IOT Enterprise LTSC						
Softwara Tools	Tool 1	Secure & Trusted Boot Capability							
SULWARE TOOIS	Tool 2		DHCP-Client, V	Veb Browser (I	E or FireFox), Jav	a JRE Capability	1		
Secure & Trusted Boot	ltem 1	On-Board TPM2.0							
	Housing			Aluminum Die	e Casting (Front)				
	Construction Type	Modular (Detachable Modules; Computer, Monitor, Touch Display, DIO)							
	Cooling	Natural Convection (Fanless Passive Cooling)							
	Operating Tomporature			-20 °C	to +65 °C				
Design	Storage								
Design	Temperature	-30°C to +70 °C							
	Operating Humidity	85% RH (non- condensing) @ 30 °C							
	Operating Altitude	10000 ft. (3.000 m)							
	Vibration	1Grms / 5 ~ 500Hz (Random) / Operation IEC 60068-2-64 10G peak acceleration (11 msec. duration)/operation IEC 60068-2-27							
		UL and cUL Information Technology Equipment (UL/CSA 62368-1)							
		UL and cUL Class 1 Division 2: Programmable Controllers for Use in Hazardous Locations (UL/CSA 61010-2-201, UL 121201, CSA C22.2 No. 213)							
Compliance	Certifications	IECEx & ATEX Zone 2/22 Hazardous Locations(IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60079-31)							
			IE	CEE CB Schem	ne (IEC 61010-2-2	201)			
			UL	TYPE 4 & 4X, II	P66 (ANSI/IEC 60	1529)			
				Maria e DI					
	Danal Cutout			217(M)	208(M/)	482(\\/)	591/\\/)		
	Dimensions (mm)	NA	NA	214 5(H)	245 5(H)	297(H)	360(H)		
Mounting	VFSA Mounting		1	100	x 100	237(11)	500(11)		
	Hardware Included			Mounti	ng Clamps				
Physical	Net Weight (kg)	NA	NA	3.8	5.1	6.9	9.0		
Specification				329(W)	410(W)	500(W)	600(W)		
	Dimensions (mm)	NA	NA	228(H) 103(D)	250(H) 108(D)	315(H) 80(D)	382(H) 108(D)		

# 2.2.4 Panel PC Motherboard Specifications (Panel PC with AMD Ryzen)

ltem	Description							
Board Size	282mm (11.1"	) x 138mm (5.43")						
	AMD® Embedde	ed V1000-Series SoC						
CPU Support	AMD® V1404I, Quad-Core, 2M L2 Cache, 2.0~3.6GHz, 15W							
	AMD® V1605B, Quad-Core,	2M L2 Cache, 2.0~3.6GHz, 15W						
Memory Support	Onboard Dual Channel DDR4	ECC RAM up to 2400MHz 8/16GB						
	AMD Radeon <sup>TI</sup>	<sup>M</sup> Vega 8 Graphics						
	DirectX® 12.1, OpenGL 4.6, OpenCLTM 2.0 graphics support							
	1 x DP++							
Graphics	1 x	(LVDS						
	DP++: resolution up	to 4096x2160 @ 60Hz						
	LVDS: dual channel 24-bit, res	olution up to 1920x1200 @ 60Hz						
	LVDS	5 + DP++						
BIOS	AMI S	PI 64Mbit						
	1 x M.2 M Key 2280 size	with (w/PCIex4 and SATA III)						
Storage	1 x Micro SD Slot							
	1 x Microchip USB2642-I							
Ethernet	4 x GbE (RJ-45)							
	2 x USB 3.1	1 x Mic in						
	2 x USB 2.0							
Outside I/O	1 x RS-232	$4 \times \text{ODE}(\text{KJ}-43)$						
	1 x RS-485							
	1 x Line-out	T X POWER Button						
Internal I/O	1 x LVDS LCD	Panel Connector						
	1 x AIO/DIO 1x30pin Conne	ector (JAE TX24-30R-10ST-H1E)						
Battery	CR203.	2 Coin Cell						
Audio	Codect	:92HD73C						
Expansion	1 x Mini PCle	e (PCIe/USB 2.0)						
схранзюн	1 x M.2 E key 2230 (PCIe/USB 2.0)							
Security	TF	PM2.0						
Watchdog Timer	255 timer levels	s, set up by software						
Tomporaturo	Operating: -30 to 85 °C							
remperature	Storage:	-30 to 85 ℃						
Humidity	Operating	: 10 to 90% RH						
	Storage:	10 to 90% RH						
OS Support	Windows 10 IoT	Enterprise (64-bit)						

# 2.3 RXi - Web HMI Panel

	Display Size	7"	10"	12"	15'	19"	24"		
	Resolution	1024 x 600 1280 x 800 WXGA WSVGA			1920 x 1080 Full HD				
	Format		Widescreen (16:10)		Widescreen (16:9)				
	Orientation	Landscape							
	Reading Angle (°)	150 (H) / 145 (V)	170 (H) / 170 (V)	176 (H) / 176 (V)	170 (H) / 170 178 (H) / 178 (V) (V)				
Display	Display Off-Color			В	lack				
	Contrast	8	00:1	1000:1	800:1	1000:1	5000:1		
	Brightness (cd/m2)	500 (1000 with Outdoor SLR Screen)		400 (1000 with Outdoor SLR Screen)	450 (1000 with Outdoor SLR Screen)	350	300		
	MTBF Backlighting			50 000	h (at 25°C)				
	Backlight	LED, Dimmable via Software							
	Processor			Freescale i.	MX 6DualLite				
Processor	# of cores/TDP			2 cor	e/2.5W				
i.MX 6DualLite	CPU frequency	1.0Ghz							
Memory	Capacity		2GB DDR3L						
Storage	Internal			4GB eMMC NA	ND Flash Memoi	ту.			
Watchdog Timer	Setup	Setup by software							
Operating Control	Method	Touch							
- I	Technology	Projected Capacitive Touch (PCT/PCAP)							
louchscreen	Touch Sensor	Multi-touch (Ten-Point)							
	Port 1	1 x 10/100/1000 Base T Ethernet RJ45							
	Port 2	1 x RS-232/422/485 COM Port (DB-9 connector)							
Interfaces	Port 3	1 x USB 2.0 (Type-A) 1 x USB OTG (micro USB)							
Status	Front Bezel Tri-color LED	Amber/Green/Red							
Indicators	On-board Buzzer			Yes (85dB soun	d level with 80m	nA mean current	t)		
Power-Supply	Voltage [V]			+24VI	DC ±10%				
		(3-Pin Co	onnector, Isolat	ed, use 28-14AV (0.19Nr	VG (0.2-1.5mm² n) torque)	) wire rated 90C	2, 1.7 in-lbs		
Power Consumption	Maximum Wattage [W]	5 W	11 W	17 W	15 W	19 W	35 W		
	Front-Side		IP66 & Type	4/4X (When Inst	alled to a suitab	le Wall/Panel)			
Protection- Class	Back-Side				P20				
Operating	OS			Linux kerne	4.1.15: Yocto				
System	Framework			Qt	5.6.2				
Softwara Tools	Tool 1	Qt WebKit / Web Browser							
----------------------------	---	---	--	----------------------------------	----------------------------------	------------------------------	------------------------------		
Software roots	Tool 2			HTML5	Capability				
Secure and Trusted Boot	Item 1	CAAM							
	Housing		Aluminum Die Casting (Front)						
Design	Construction Type		Modular (Detachable Modules; Computer, Monitor, Touch Display, DIO)						
	Cooling		Natural Convection (Fanless Passive Cooling)						
	Operating Temperature	-20°C to +65°C							
	Storage Temperature		-30°C to +70°C						
	Operating Humidity			85% RH (non- co	ondensing) @ 30	٥°C			
Environment	Operating Altitude			10000 ft	. (3.000 m)				
	Vibration		1Grms / 5 ~ 500Hz (Random) / Operation IEC 60068-2-64						
			10G peak acceleration (11 msec. duration)/operation IEC 60068-2-27						
	UL and cUL Information Technology Equipment (UL/CSA 6				: (UL/CSA 6236	8-1)			
		UL and cUL Class 1 Division 2: Programmable Controllers for Use in Hazardous Locations (UL/CSA 61010-2-201, UL 121201, CSA C22.2 No. 213)					ous Locations		
Compliance	Certifications	IECEx & ATEX Zone 2/22 Hazardous Locations(IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60079-31)							
		IECEE CB Scheme (IEC 61010-2-201)							
		UL TYPE 4 & 4X, IP66 (ANSI/IEC 60529)							
		Marine: DNV, ABS, BV							
	Panel Cutout Dimensions (mm)	183.5 (W) 128.5 (H)	255.5 (W) 174 (H)	317 (W) 214.5 (H)	398 (W) 245.5 (H)	482 (W) 297 (H)	581 (W) 360 (H)		
Mounting	VESA Mounting	100 x 100				, ,			
	Hardware Included	Mounting Clamps							
	Net Weight (kg)	2.0	2.6	3.8	5.1	6.9	9.0		
Physical Specification	Dimensions (W x H x D)	192 (W) 137 (H) 65 (D)	267 (W) 186.2 (H) 65 (D)	329.1 (W) 226.8 (H) 66 (D)	410.2 (W) 257.6 (H) 65 (D)	500 (W) 315 (H) 70 (D)	600 (W) 382 (H) 71 (D)		

# 2.3.1 RXi - Web Panel HMI Motherboard Specifications

ltem	Description
Board Size	170mm x 113mm, 10 Layers, 1.6mm
CPU Support	Freescale ARM Cortex A9 i.MX6 Dual Lite 1.0GHz
Memory Support	Onboard 2GB DDR3L SDRAM
Storago	Onboard 4GB eMMC Flash
Storage	Onboard Micro SD Card slot
Ethernet	1 x 10/100/1000MHz, RJ45 connector
	1 x USB 2.0, Type A connector
Outside I/O	1 x RS-232/422/485, DB9 connector
	1 x USB OTG, Micro USB connector
Internal I/O	1 x Debug port
Battery	CR2032 Coin Cell
Watchdog Timer	System Reset, Programmable via Software from 1 to 255 Seconds/Minutes
T	Operating: −20 to 65 °C
Temperature	Storage: -40 to 70 °C
Humidity	Storage: 10 to 90% @40 °C
OS Support	Linux Kernel 4.9.11 + Chromium Browser 54.0.2810.2 (Chromium 54 Over)

# Section 3: Hardware

# 3.1 RXi - Industrial Monitor

3.1.1 Jumpers and Connectors Location

Figure 63: Jumpers and Connectors Location
<u>External IO</u>



# Connecting Input Power (24V DC-in)

To connect to power, follow these steps:

- 1. Verify that the power cable is not energized.
- 2. Loosen the screw clamps on the mating power connector.
- 3. Strip the insulation from the power cables.
- 4. Secure the power cable to the mating connector, noting polarity, and tighten the screw clamps. The torque for the attaching screws is 0.3 Nm (2.26 in-lb).



- 5. Apply dc power to the unit. During normal startup and operation, the LED status indicator displays as follows:
  - Solid amber while the RXi Industrial Display unit is starting up
  - Solid green during normal operation
- 6. Once power is applied, the unit begins initializing. The first thing to display is the splash screen.

Be sure to connect a DC power cord to this 3-pin power connector. Using a voltage out of the range may fail to boot the system or cause damage to the system board.

**Note:** All RXi Industrial Displays are configured with reverse voltage protection to mitigate power failure if plugged in by error.

# 3.1.2 I/O and Connectors

# DC\_IN1

(3.5mm Pitch 1x3 Pin Connector), DC24V power input connector

Pin #	Power Input
Pin1	DC+24V
Pin2	Ground
Pin3	FG

# HDMI (HDMI Input)

(HDMI Connector), High Definition Multimedia Interface connector, provides high-quality video and audio input.

### Figure 64: HDMI Layout



Signal Name	Pin#	Pin#	Signal Name
DATA2+	1	2	DATA2 Shield
DATA2-	3	4	DATA1+
DATA1 Shield	5	6	DATA1-
DATA0+	7	8	DATA0 Shield
DATA0-	9	10	CLK+
HDMI CAB DET	11	12	CLK-
NC	13	14	NC
HDMI SCL	15	16	HDMI SDA
GND	17	18	HDMI 5V
HDMI HPD	19		

# DP1 (Display Port Input)

Signal Name	Pin#	Pin#	Signal Name
LANE3-	1	2	GND
LANE3+	3	4	LANE2-
GND	5	6	LANE2+
LANE1-	7	8	GND
LANE1+	9	10	LANEO-
GND	11	12	LANE0+
GND	13	14	GND
AUX_CHP	15	16	DP CAB DET
AUX_CHN	17	18	DP HPD
RETURN	19	20	DP 3.3V

(Display Port Connector), Display Port Interface connector, provide high-quality video and audio input.

# DP2 (Display Port Output)

(Display Port Connector), Display Port Interface connector, provide high-quality video and audio output.

Signal Name	Pin#	Pin#	Signal Name
LANE0+	1	2	GND
LANEO-	3	4	LANE1+
GND	5	6	LANE1-
LANE2+	7	8	GND
LANE2-	9	10	LANE3+
GND	11	12	LANE3-
GND	13	14	GND
AUX_CHP	15	16	GND
AUX_CHN	17	18	DP HPD
RETURN	19	20	DP 3.3V

# CN1 (Debug) - Reserved

(2.0mm 1x4 Pin Header), Reserved for debugging only.

Pin #	Signal Name
1	3.3V
2	UART TX
3	UART RX
4	GND

# **CN2 - Reserved**

(2.0mm 1x4 Pin Header)

Pin #	Signal Name	
1	HOST_I2C_SCL	
2	HOST_I2C_SDA	
3	HOST_IRQ_OUT	
4	GND	

# **CN3 - Reserved**

(2.0mm 1x4 Pin wafer connector), Reserved for IR receiver

Pin #	Signal Name	
1	GND	
2	IR	
3	3.3V	
4	NC	

# CN4 (OSD)

(2.0mm 1x9 Pin wafer connector), On-Screen Display menu Control connector.

Pin #	Signal Name
1	Power Key
2	R_LED
3	G_LED
4	GND
5	MENU Key
6	DOWN Key
7	UP Key
8	SELECT Key
9	NC

# **CN5 (LVDS Output)**

(2.0mm 2x25 Female Pin Header), Connect to TB-572B, providing LVDS, USB, SM BUS, and LED signals.

Signal Name	Pin#	Pin#	Signal Name
+12V	1	2	+12V
BackLight Enable	3	4	BackLight CTRL
GND	5	6	GND
Panel 3.3V	7	8	Panel 3.3V
Panel 5V	9	10	Panel 5V
GND	11	12	GND
LVDS Odd0-	13	14	LVDS Odd0+
LVDS Odd1-	15	16	LVDS Odd1+
LVDS Odd2-	17	18	LVDS Odd2+

LVDS Odd CLK-	19	20	LVDS Odd CLK+
LVDS Odd3-	21	22	LVDS Odd3+
LVDS Even0-	23	24	LVDS Even0+
LVDS Even1-	25	26	LVDS Even1+
LVDS Even2-	27	28	LVDS Even2+
LVDS Even CLK-	29	30	LVDS Even CLK+
LVDS Even3-	31	32	LVDS Even3+
GND	33	34	GND
USB D-	35	36	USB 5V
USB D+	37	38	GND
GND	39	40	SM Bus CLK1
5V	41	42	SM Bus Data1
Reserved	43	44	Reserved
GND	45	46	SM Bus CLK2
3.3V	47	48	SM Bus Data2
LED1	49	50	LED2

# CN6 (USB 2.0)

(2.0mm 1x9 Pin wafer connector), For external USB2.0 signal.

# Figure 65: USB2.0



Pin #	Signal Name
1	USB 5V
2	USB-
3	USB+
4	GND

# CN7 (Line Out)

(Diameter 3.5mm Jack), Line Out audio port. Line Out can be connected to headphones, speakers, or an amplifier.

# Figure 66: Line Out



# JP1

(2.0mm Pitch 1x3 Pin Header),

JP1 Pin #	Function
Close 1-2	Backlight Enable & Backlight PWM Level select 3.3V
Close 2-3	Backlight Enable & Backlight PWM Level select 5V

# JP2

(2.0mm Pitch 1x3 Pin Header), Backlight control setting.

JP1 Pin #	Function
Close 1-2	For PWM Mode (Default)
Close 2-3	For DC Mode

# SW1 - Reserved

Panel Type Select.

# 3.1.3 LED Indicators

# **Operation Status LEDs (Screen)**

All RXi Industrial Displays have a tri-color LED built into the screen that provides a visual indication of the operation status.

LED State	System State
Amber, Solid	Operating system starting
Green, Solid	Normal operating state
Green, Blinking	Backlight off
Red, Blinking	Backlight failure
Off	Power not applied to the unit

# 3.2 RXi - Panel PC

# 3.2.1 Battery

The lithium-ion battery powers the real-time clock and CMOS memory. It is an auxiliary source of power when the main power is shut off or disconnected. It is a standard CR2032 battery and is accessible on the bottom of the computing module when separated from the screen (as shown below) Safety Measures

- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to local ordinances.
- •

#### Figure 67: C2032 Battery



# 3.2.2 I/O and Connectors

# Outside I/O

The rear panel I/O port arrangement consists of the following:

- 1 power button
- 1 24V DC-in 3-pin power connector
- 1 DP++
- 2 USB 3.0 ports
- 2 RJ45 LAN ports
- 1 UART terminal-block
- 1 Line-out jack
- 1 Mic-in jack

#### Figure 68: Rear Panel Arrangement



# **Connecting Input Power (24V DC-in)**

To connect to power, follow these steps:

- 2. Verify that the power cable is not energized.
- 3. Loosen the screw clamps on the mating power connector.
- 4. Strip the insulation from the power cables.
- 5. Secure the power cable to the mating connector, noting polarity, and tighten the screw clamps. The torque for the attaching screws is 0.3 Nm (2.26 in-lb).
- 6. Apply dc power to the unit. During normal startup and operation, the LED status indicator displays as follows:
  - Solid amber while the RXi Industrial Display unit is starting up
  - Solid green during normal operation



7. Once power is applied, the unit begins initializing. The first thing to display is the splash screen.

Be sure to connect a DC power cord to this 3-pin power connector. Using a voltage out of the range may fail to boot the system or cause damage to the system board.

# **Graphics Interface**

The display port consists of the following:

#### **DP++ Port**

The DP++ is a digital display interface used to connect a display device such as a computer monitor. It is used to transmit audio and video simultaneously. The interface, which is developed by VESA, delivers higher performance features than any other digital interface.

#### **BIOS Setting**

Configure the display device in the Chipset menu ("DISPLAY control" submenu) of the BIOS. Refer to chapter 3 for more information.

# **RJ45 LAN Ports**

#### **Features**

2 Intel® I210IT PCI Express Gigabit Ethernet controllers (4 on larger box module)

The LAN ports allow the system board to connect to a local area network through a network hub or router.

#### **BIOS Setting**

Configure the onboard LAN in the Advanced menu ("Wakeup Configuration" submenu) of the BIOS. Refer to chapter 3 for more information.

# **USB** Ports

The USB ports allow for data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals. The RXi – Panel PC is equipped with 2 onboard USB 3.0 ports (USB 0-1) in the small configuration with an additional 2 USB 2.0 ports (USB 4-5) in the large box configuration.

#### **BIOS Setting**

Configure the onboard USB in the Advanced menu ("Wakeup Configuration" submenu) of the BIOS. Refer to chapter 3 for more information.

# Wake-On-USB Keyboard/Mouse

The Wake-On-USB Keyboard/Mouse function allows you to use a USB keyboard or USB mouse to wake up a system from the S3 (STR - Suspend To RAM) state.

# Serial Ports (UART)

Serial Connection	Pin	Function	
	1	TXD	0.00000000
	2	RXD	and the state of the state
RS232	3	RTS	678910
	4	CTS	
	5	GND	
RS485	6	TX+	3 (1959) <sup>1</sup> ~
	7	TX-	
	8	RX+	Z 4
	9	RX-	
	10	GND	

# Audio

#### **Rear Audio**

The system board is equipped with 2 audio jacks (Line-out and Mic-in). A jack is a one-hole connecting interface for inserting a plug.

• Line-out Jack (Lime)

This jack is used to connect a headphone or external speakers.

• Mic-in Jack (Pink)

This jack is used to connect an external microphone.

#### **BIOS Setting**

Configure the onboard Audio device in the Chipset menu ("SB HD Azalia Configuration" submenu) of the BIOS.

# I/O Connectors

#### Serial ATA (SATA) Connector

#### **Features**

- 1 Serial ATA 3.0 port with data transfer rate up to 6Gb/s
- Integrated Advanced Host Controller Interface (AHCI) controller

The Serial ATA connector is used to connect the Serial ATA device. Connect one end of the Serial ATA data connector to a SATA connector on the other end to your Serial ATA device.

#### **BIOS Setting**

Configure the Serial ATA drive in the Chipset menu ("SB SATA Configuration" submenu) of the BIOS. Refer to chapter 3 for more information.

# **Expansion Slots**

#### **Micro SD Socket**

The micro SD socket allows you to install a micro SD card for the expansion of available storage.

# LVDS LCD Panel Connector

The system board allows you to connect an LCD Display Panel with the LVDS LCD panel connector. This connector transmits video signals and power from the system board to the LCD Display Panel. Refer to the right side for the pin functions of the LVDS connector.

#### **BIOS Setting**

Configure the LCD panel in the Chipset menu ("DISPLAY control" submenu) of the BIOS. Refer to Chapter 3 for more information.

#### **AIO/DIO Connector**

AIO/DIO connector provides functionality to external devices that are connected to the connector. **(FOR FUTURE USE)** 

# 3.2.3 LED Indicators

# **Operation Status LEDs (Screen)**

All RXi Industrial Displays have a tri-color LED built into the screen that provides a visual indication of the operation status.

LED State	System State
Amber, Solid	Operating system starting
Green, Solid	Normal operating state
Green, Blinking	Backlight off
Red, Blinking	Backlight failure
Off	Power not applied to the unit

# **Ethernet Port Operation LEDs**

Speed Link Activity	LED	LED State	Operating State
	Speed	Yellow, ON	10/100/1000
	Link Activity	Green, ON	Link Status

# 3.3 RXi - Web Panel

# 3.3.1 Jumpers and Connectors Locations

# **Setting Jumper Functions**

Before installing the Web Panel, please set the necessary functions following the chart below.

Note: To determine Pin 1 of the jumper and port, please observe the marking beside the plug. it will be marked as "1", a bolded line, or a " $\triangle$ "; see the welding plate at the backside, the square welding plate is Pin 1.

#### Setting Jumper Functions (SW1)

SW1: 2bit switching ON/OFF, used to set the recording and the starting mode of the Motherboard.

		ON	OFF
C\\/1		DOWNLOAD	NORMAL
2001	T.BOOT_MODET_S	MODE	MODE
	2.BOOT_DEV	SD	DEFAULT

Figure 69: Junction Function (SW1)



# **Socket Description**

### Connecting Input Power (24V DC-in)

To connect to power, follow these steps:

- 1. Verify that the power cable is not energized.
- 2. Loosen the screw clamps on the mating power connector.
- 3. Strip the insulation from the power cables.
- 4. Secure the power cable to the mating connector, noting polarity, and tighten the screw clamps. The torque for the attaching screws is 0.3 Nm (2.26 in-lb).



- 5. Apply dc power to the unit. During normal startup and operation, the LED status indicator displays as follows:
  - Solid amber while the RXi Industrial Display unit is starting up
  - Solid green during normal operation
- 6. Once power is applied, the unit begins initializing. The first thing to display is the splash screen.

Be sure to connect a DC power cord to this 3-pin power connector. Using a voltage out of the range may fail to boot the system or cause damage to the system board.

Before connecting the Web Panel to other devices, please read this manual carefully first to prevent damage to the Motherboard.

#### Power Socket (DC\_IN1)

DC\_IN1: (Conn. Header Socket, 3.5mm, 1 x 3PIN), used to provide 24V voltage for the system.

DC_IN1 Pin#	Signal
Pin1	FG
Pin2	DC_IN-
Pin3	DC_IN+

#### Figure 70: Power Socket (DN-IN1)



#### USB Socket (USB\_OTG1/USB1)

USB\_OTG1: Conn. Mini-USB, B-Type Female, SMD-5P With DIP 4pin, used to load system firmware



USB_OTG1 Pin#	Signal Name
1	5V_USB_OTG
2	USB_OTG_DN
3	USB_OTG_DP
4	USB0_ID
5	GND

USB1: Type-A connector, supports USB devices.

USB_OTG1 Pin#	Signal Name
1	5V_USB_HOST1
2	USBDN_DM1
3	USBDN_DP1
4	GND
5	GND
6	GND

#### LAN Socket (LAN1)

LAN 1: Conn. I/O Port, RJ45, 1000M, provide a solid RJ45 Ethernet Dock, GREEN denotes data transfer, YELLOW verifies a connection to the Internet.

#### Connecting Socket (COM1)

COM1: Conn. I/O Port, RS232, DB9, Male. Standard DB9 port, provide 1 route for RS232/422/485.

COM1 Pin#	Signal Name
1	DCD1422TX485-
2	RXD1_422TX+_485+
3	TXD1_422RX+
4	DTR1422RX-
5	GND
6	NC

7	NC
8	NC
9	NC

#### Debug Socket (DEBUG1)

DEBUG1: Conn. 1.25mm, (DF14 with pointing) SMD-4P, used for debugging information.

DEBUG Pin#	Signal Name
1	3P3V_S0_IO
2	UART1_TXD_DEBUG
3	UART1_RXD_DEBUG
4	GND

#### SD-Card Socket (SD1)

SD1: Socket, mini SD/TF Card, 9 pins, SMD, supports SD/TF Card devices.

#### BAT1 Socket (BAT1)

BAT1: BAT Socket, BS-10-A1B0J001, 20mm SMT, supports non-chargeable batteries. CR-2032

#### Backlight Board Socket (BTB\_MAIN\_TB572B\_1)

BTB\_MAIN\_TB-572B\_1: Conn. Female, WCON, 2243-225M3CUT, 2 x 25P, 2.00mm, 180°, H=4.35, 10u", SMD-50P, TB-572B Backlight Board Socket.

# 3.3.2 LED Indicators Operation Status LEDs (Screen)

All RXi Industrial Displays have a tri-color LED built into the screen that provides a visual indication of the operation status.

LED State	System State
Amber, Solid	Operating system starting
Green, Solid	Normal operating state
Green, Blinking	Backlight off
Red, Blinking	Backlight failure
Off	Power not applied to the unit

# **Ethernet Port Operation LEDs**

Speed Link Activity	LED	LED State	Operating State
	Speed	Yellow, ON	10/100/1000
	Link Activity	Green, ON	Link Status

# Section 4: Installation and Mounting Information

# 4.1 Panel Cutout Dimensions

# 4.1.1 Industrial Monitor

The RXi Industrial Monitor can be panel-mounted as presented in Section 4.2, *Panel Installation Steps*. A Type 4, Type 4X, or IP 66 rating is achieved when mounted to the flat surface of a sufficiently rated enclosure. Please follow the instructions in Section 4.2, *Panel Installation Steps*. Panel Thickness: 16<sup>1</sup> to 7 gauge (1.6 to 5 mm)





Display Size (in)	Width (mm)	Height (mm)
15	398	245.5
19	482	297
24	581	360

All panel cutout measurements should be within ±0.5 mm. Values presented are width and height only.

<sup>&</sup>lt;sup>1</sup> For IP66 installations of 12-inch displays (IC758CSW12SCREEN-A and IC758COW12SCREENSLR-A) use a 14 to 7 gauge (2 to 5 mm) thick panel.

# 4.1.2 Panel PC Cutout Dimensions

The RXi Panel PC can be panel-mounted as presented in Section 4.3, *Mounting to Modular Display*.

A Type 4, Type 4X, or IP 66 rating is achieved when mounted to the flat surface of a sufficiently rated enclosure. Please follow the instructions in Section 4.2, *Panel Installation Steps.* 

Panel Thickness: 16<sup>2</sup> to 7 gauge (1.6 to 5 mm)

Panel Thickness: 1.6 to 5mm

All measurements within ±0.5mm

#### **Figure 72: Panel Cutout Dimension Definitions**



Display Size (in) Width (mm) Height (mm) 183.5 128.5 7 10 255.5 174 317 214.5 12 15 398 245.5 19 482 297 24 581 360

<sup>&</sup>lt;sup>2</sup> For IP66 installations of 12-inch displays (IC758CSW12SCREEN-A and IC758COW12SCREENSLR-A) use a 14 to 7 gauge (2 to 5 mm) thick panel.

# 4.1.3 Web Panel Cutout Dimensions

# Figure 73: Panel Cutout Dimension Definitions



Display Size (in)	Width (mm)	Height (mm)
7	183.5	128.5
10	255.5	174
12	317	214.5
15	398	245.5
19	482	297
24	581	360

# 4.2 Panel Installation Steps

- 1. Verify that the gasket is present and properly seated in the bezel channel located on the sides of the unit
- 2. Insert the unit into the mounting panel cutout

#### Figure 74: Panel Install View



3. Insert the hook of the mounting bracket into the mounting hole as displayed in the following figure.

#### Figure 75: Mounting Bracket Insertion



- 4. Tighten all mounting brackets by hand until the gasket seal contacts the mounting surface uniformly.
- 5. In a cross pattern around the monitor tighten all mounting clip screws to a torque of 13 to 13.9 in-lbs. (15 to 16kgf-cm) making sure not to overtighten the bracket.

Figure 76: Tighten Mounting Bracket



Figure 77: 7" Mount

# 4.3 Mounting to Modular Display

# 2-M3x6 Pan-head SCREW

#### Figure 78: 10" Mount



#### Figure 79: 12" Panel Mount



#### Figure 80: 15" Panel Mount



# Figure 81: 19"/24" Panel Mount



# Figure 82: Panel PC with AMD Ryzen Mount



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# 4.4 VESA Mount

#### Figure 83: 7" VESA Mount



#### Figure 84: 10" VESA Mount







# Figure 86: 15" VESA Mount



#### Figure 87: 19"/24" VESA Mount



#### Figure 88: Panel PC with AMD Ryzen VESA Mount



# **A**CAUTION

- Tighten the mounting clip screws by hand until the gasket contacts the mounting surface uniformly.
- Tighten the mounting clip screws to a torque of 8-10 kgf-cm by using the specified sequence. Be sure not to overtighten.

# Section 5: Firmware Update Instructions for the RXi-Panel PC and RXi2-LP IPC

The following Firmware Update requires the user to use a portable media storage device. Users can deploy to either a DVD or a USB stick.

# 5.1 Deploy to DVD (Option 1)

- 1. Place a blank DVD in your optical drive.
  - a. If your system does not have a DVD drive, connect an external DVD drive to the system first.
  - b. **Note**: The optical drive must have support for DVD-burning to continue with this process.
- 2. Download the .iso file to your computer, and open File Explorer to the .iso file location
- 3. Right-click on the .iso file and select **Burn disk image.**
- 4. A prompt will appear requesting the user to select the disk burner. Select the disk burner containing the blank DVD and select **Burn**.
  - a. If you only have one disk burner with the blank DVD inside, it will default to that burner.
  - b. Optionally, select Verify disc after burning, but it is not required for this process
- 5. The optical drive will begin burning the DVD. Upon completion, the Windows Disk Image Burner will notify you that the process is complete and that the contents of the drive will be viewable in File Explorer.
- 6. Once the process is complete and the files are viewable, you may proceed with recovering the system.

# 5.2 Deploy to USB Stick (Option 2)

- 1. Insert a blank USB drive into your computer.
  - a. This process may erase any data stored on the USB drive. If your selected USB drive contains any important data, please be sure to create a backup of the files before proceeding.
- 2. Download the .iso file to your computer and open your USB boot media creation tool.
- 3. Following the process with your chosen USB boot media creation tool.

# 5.3 Recover from Image

- 1. During startup, open the boot menu by repeatedly pressing **F7**.
- 2. Under the boot menu, select the recovery image as your boot option.
- 3. Once you have selected the correct boot option, a Windows PE environment will begin to boot.
- 4. Once the Windows PE environment has loaded, you will be presented with a GUI with multiple options.
- 5. Select **Recover** and the process will begin.
- 6. Once the process has been completed, the unit will automatically restart. Once it has restarted, remove your recovery media and the unit will boot into Windows 10
  - a. NOTE: If the boot priority has been changed, please go back into BIOS to adjust the boot priority to ensure the internal SSD is the primary boot device

# 5.4 Steps for Checking the Installed Version

1. Release note file location:

You can find the release notes file in the **AX** directory on the recovery disc and the C:\Windows directory (after recovery), the file name will be a string of numbers with no extension.

Figure 89: AX Director	у.
------------------------	----

			Tł	nis PC > Windows (C:)	Windows
AX	2019/2/27 _	89000301	2018/12/6	A	
boot	2018/4/12	BCD	2011/4/12	Name	Date modified
📙 efi	2018/4/12	CreatePartitions-UEFI	2018/10/3	Wass.	0/15/2018 12:22 AM
en-us	2019/2/27 _	n DMCCtrl	2016/4/14		5/15/2010 12:55 AIVI
sources	2018/4/12	📄 language	2019/1/8 7	Web	9/15/2018 12:33 AM
autorun	2018/4/12	MSVBVM60.DLL	2008/4/15 📌	WinSxS	12/6/2018 2:45 PM
bootmgr	2018/4/12	REBOOT	2019/3/13	070689000301	12/6/2018 2:24 PM
bootmgr.efi	2018/4/12	Rec.wim	2018/4/14	■ bfsvc	9/15/2018 12:28 AM
CDWHERE	2010/11/26	I run	2019/3/7 7	Dootstat.dat	12/12/2018 11:40
😂 IMAGEX	2013/1/29_	I SHUTDOWN	2018/4/12 🌋	Dtclostall	12/12/2018 11:32
		sys.wim	2018/4/14	Dichistan	12/12/2010 11:52
				EnterpriseS	9/15/2018 12:28 AM

#### 2. Folder Options:

In C:\Windows the file properties of the release notes file are set to hidden, you must change the file browsing settings in **Folder Options** to see the file.

# Figure 90: Folder Options

Folder Options	×	
General View Search		
Folder views You can apply this view (such as Details or Icons) to		
all folders of this type.		
Apply to Folders Reset Folders		
Advanced settings:		
Files and Folders	^	
Always show icons, never thumbnails		
Always show menus		
✓ Display file icon on thumbnails		
Display file size information in folder tips Display the full path in the title bar		
Hidden files and folders		
<ul> <li>Don't show hidden files, folders, or drives</li> </ul>		
Show hidden files, folders, and drives		
Hide empty drives		
Hide folder merge conflicts	~	
Restore Defaults		
OK Cancel App	ly	

3. Revision check:

The release notes file uses dates to publish each change.

#### Figure 91: Release Notes

070689000301 - Notepad		-		×
File Edit Format View Help				
2020/02/04				~
Download and install Chrome (V	PN to USA)			
2019/10/03	==			
Chrome language default(en-us)				
2019/03/26	==			
add Chrome, firefox, SNMP, Sec No KEY	ure boot			
2019/01/23				
AMD Driver: 18.20.28.180731a				
Disable "Fast Startup"				
Disable Network Discovery on p	rivate turn	off		
2018/12/12				
070689000301				
UEFI WIN10 2019 LTSC Entry X64				
Eng				
SBC-7818(AHM-689X)				
AIS(Dennis)				
no logo	uster)			
<				>
	Windows (CF	Ln 8, Col 17	100%	

# Section 6: RXi Panel PC Windows Activation Procedure

**The preloaded Windows 10 IOT Enterprise image on Panel PC is not activated by default.** The product key is present on the rear of the Panel PC backing module to activate Windows 10 IOT Enterprise.

# 6.1 Activate a Windows 10 IoT Enterprise LTSC device Using an Internet Connection

#### NOTICE

It is required to place the Panel PC unit in a DMZ network architecture with internet access temporarily to perform the activation with Microsoft.

- Press the Windows key (Start button), then go to Settings > Update and Security > Activation (or) Launch This PC properties.
- 2. Proceed with license activation by pressing the **Change Product Key** option which is highlighted in the below image in green color.

#### Figure 92: Activation

ଜ	Activation		
Fi	nd a setting	Windows       Edition     Windows 10 Enterprise LTSC       Activation     Windows is not activated	
C	Windows Update	Windows reported that the hardware of your device has changed. Error code: 0xC004F211 If you're having problems with activation, select Troubleshoot to try and fix the problem.	
曲	Delivery Optimization		
•	Windows Security	/3 Troubleshoot	
Ţ	Backup	Activate Windows now	
ß	Troubleshoot	Running a non-genuine copy of Windows can put you at greater risk for viruses and other security threats.	
3	Recovery	To get genuine Windows, enter a different product key. If you don't have one, contact your system administrator.	
$\odot$	Activation	Change product key	

**Note:** Ignore the error message – "Windows reported that the hardware of your device has changed. Error code: 0xC004F211."

Figure 93: Product Key Sticker

1. Find the **Product Key Sticker** that is present on the rear side of the Panel PC backing module as shown in (Figure 93).



2. Part of the **Product Key** may be covered with gray scratch ink. Remove (scratch) the ink layer to reveal the Product Key as shown in (Figure 94).

Figure 94: Removing the Scratch Layer

Figure 95: Enter the Product Key

	MUV-00004	
	WINDOWS: 10 IOT ENT 201 OEM SOFTWARE	19 LTSC ENTRY
		04248-000-027-371 X21-91817
Microsoft microsoft comhowstell	Product Key: J	D-2CD9W-8RJ26-XQDCB

3. Enter the retrieved **Product Key** into the popup box and press **Next** (Figure 95).

Enter a product key				
Your product key should be in a pr on the box the Windows DVE	in email from whoever D or USB came in.	sold or distributed	l Windows to y	/ou,
Product key				
~~~~~~~~~~~~~~~~~~	-~~~			

4. The Windows 10 product key is now active.

- 1. On the device, open a command prompt as the administrator.
- Navigate to the *system drive*:\Windows\System32 with folder type slmgr.vbs /ipk XXXX-XXXX-XXXX-XXXXX-XXXXX-XXXXX. The XXXXX characters will be the 25-character product key present on the side of the device (Figure 96).
- 3. **Product Key** is present on the Panel PC backing module as showing below.



4. The part of the Product Key is covered by the scratch layer as highlighted below. The user needs to retrieve this by removing the scratch layer (scratch-off Microsoft labeled layer) as highlighted below.

#### Figure 97: Revealing the Product Key

Figure 96: Product Key Sticker



5. After step 2, a message display stating that the Product Key was installed successfully. Click **OK** to proceed.

Windows Script Host	×
Installed product key G 3-81 D-RR2WV-T	successfully.
	ОК

6. Press the **Win+R** keys to open **Run**, then type: **SLUI 4** and click on **OK**.

# Figure 99: Run the SLUI 4 Command

Figure 98: Windows Script Host

🖅 Run	×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
<u>O</u> pen:	SLUI 4 ~
	OK Cancel <u>B</u> rowse

**Note**: There is a space between SLUI and 4. The 4 option instructs SLUI to launch the telephone activation UI.
Figure 100: Select Country or Region

7. Select your country or region and click **Next**. It navigates to next page where we can see **Installation** ID.

ghanistan	~	

- 8. Call the Microsoft Product Activation Center. (The phone number is provided based on the selected region.) Proceed through the automated menu and answer a few questions about the Windows activation.
- 9. At the end of the automated menu, the user will need to confirm the 63-digit Installation ID number. Enter the Installation ID number as shown in Figure 101. The Installation ID number will be grouped into sets of nine (seven digits per set).

#### Figure 101: Technical Support

Call one o charges r	of these n nay be ap	umbers. Th plied by lo	ne automa cal operat	ted phor ors for to	ne system v oll-free nui	will ask fo nbers in o	r your inst ertain cou	allation ID (I Intries or reg	IID). Some gions.
<b>Toll free:</b> 1800 1111	00 or 1800	) 102 1100							
<b>Toll:</b> 91 80 401	03000								
Installatio	on ID:								
			4						
4755484	9241585	0675540	9136402	1916911	2248936	4118683	0066502	4976403	
Read our	privacy sta	atement							

10. The phone activation system will provide the user with a 48-digit **Confirmation ID**. Enter the Confirmation ID as seen in (Figure 102).



Figure 102: Confirmation ID

- 11. Once the Confirmation ID has been entered, click the Activate Windows button.
- 12. To verify the licensing status, open the command prompt as the Administrator on the device.
- 13. Navigate to the <system drive >:\Windows\System32 folder, type

cscript slmgr.vbs /dlv, and verify that the License Status now displays Licensed.

Example: c:\Windows\System32>cscript slmgr.vbs /dlv

#### Figure 103: Command Prompt



# Section 7: Firmware Update Instructions for the RXi - Web Panel

1. Locate the SW1 dip switch.

## Figure 104: SW1 Dip Switch



2. Change SW1 1 to ON to enable download mode.

### Figure 105: SW1 Switch Toggled to ON



3. Connect a Micro USB Cable from your desktop/laptop PC (running windows operating system) to the web panel in the OTG port on the Web Panel.



4. Power on the Web Panel and then on your desktop/laptop PC, double click the firmware update tool **mfgtool2-yocto-mx-sabresd-emmc.vbs** executable file.

#### Figure 107: .VBS Location

HABMfgTool_20191029 >			
2稱 ^	修改日期	類型	大小
Profiles	2019/10/29 下午 04:50	檔案資料夾	
Utils	2019/10/29 下午 04:51	檔案資料夾	
gitignore	2018/10/4 下午 03:11	GITIGNORE 檔案	1 KB
🔊 cfg.ini	2018/10/4 下午 03:11	組態設定	1 KB
libMfgToolLib.so	2018/10/4 下午 03:11	SO 檔案	6,393 KB
linux-cvbs.sh	2018/10/4 下午 03:11	SH 檔案	2 KB
🗋 linux-runvbs.sh	2018/10/4 下午 03:11	SH 檔案	1 KB
linux-ver-usage	2018/10/4 下午 03:11	檔案	1 KB
MfgTool.log	2019/10/5 上午 03:52	文字文件	14 KB
MfgTool2.exe	2018/10/4 下午 03:11	應用程式	1,950 KB
mfgtool2-yocto-mx-sabresd-emmc.vbs	2018/10/4 下午 03:11	VBScript 指令檔	1 KB
📄 mfgtoolcli	2018/10/4 下午 03:11	檔案	200 KB
MfgToolLib.dll	2018/10/4 下午 03:11	應用程式擴充	2,190 KB
README.md	2018/10/4 下午 03:11	MD 檔案	1 KB
🔄 UICfg.ini	2018/10/4 下午 03:11	組態設定	1 KB

5. If a USB connection is detected, you will see the **HID-Compliance device** as shown in the following picture, then click **Start** to update the Web Panel firmware.

# Figure 108: HID-Compliant Device

Hub 5Port 6	Status Information	
rive(s):	Successful Operations:	0
		0
HID-compliant device	Failure Rate:	0 %
	Start	Exit

Hub 5Port 6	Status Information	
Drive(s):	Successful Operations:	0
	Failed Operations:	0
Jumping to OS image.	Failure Rate:	0 %
	Stop	Exit
	- Ctop	10000
n MfaTool MultiPanel (Library	262)	
MfgTool_MultiPanel (Library: . Hub 5Port 6	2.6.2)	
MfgTool_MultiPanel (Library: Hub 5Port 6 Drive(s): D:	2.6.2) Status Information Successful Operations:	- X
MfgTool_MultiPanel (Library: Hub 5-Port 6 Drive(s): D:	2.6.2)	0 0
MfgTool_MultiPanel (Library: Hub 5Port 6 Drive(s): D: Sending and writting rootfs	2.6.2) Status Information Successful Operations: Failed Operations: Failure Rate:	000%
MfgTool_MultiPanel (Library: Hub 5Port 6 Drive(s): D: Sending and writting rootfs	2.6.2) Status Information Successful Operations: Failed Operations: Failure Rate:	0 0 0%

6. Upon completion of the update, you will see 1 displayed under **Successful Operations**. Click **Stop** and **Exit**, then Power-off Web Panel.

# Figure 109: Successful Operations

Hub 5Port 6	Status Information	
rive(s): D:	Successful Operations:	1
	Failed Operations:	0
Done	Failure Rate:	0.00 %
	Stop	Exit

7. Adjust SW1 **1** back to **Off** for normal operation mode.

## Figure 110: SW1 Toggled to OFF



8. To check the Web Panel firmware version, upon restart of the Web Panel, the current Firmware version will be displayed.

# **General Contact Information**

Home link: http://www.emerson.com/industrial-automation-controls

Knowledge Base: https://www.emerson.com/industrial-automation-controls/support

# **Technical Support**

<b>Americas</b> Phone:	1-888-565-4155 1-434-214-8532 (If toll free option is unavailable)
	Customer Care (Quotes/Orders/Returns): <u>customercare.mas@emerson.com</u> Technical Support: <u>support.mas@emerson.com</u>
<b>Europe</b> Phone:	+800-4444-8001 +420-225-379-328 (If toll free option is unavailable) +39-0362-228-5555 (from Italy - if toll-free 800 option is unavailable or dialing from a mobile telephone)
	Customer Care (Quotes/Orders/Returns): <u>customercare.emea.mas@emerson.com</u> Technical Support: <u>support.mas.emea@emerson.com</u>
<b>Asia</b> Phone:	+86-400-842-8599 +65-6955-9413 (All other Countries)
	Customer Care (Quotes/Orders/Returns): <u>customercare.cn.mas@emerson.com</u> Technical Support: <u>support.mas.apac@emerson.com</u>

Any escalation request should be sent to mas.sfdcescalation@emerson.com

**Note:** If the product is purchased through an Authorized Channel Partner, please contact the seller directly for any support.

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