M10R1 10” Rugged Industrial Tablet

User Manual

Version: 1.4

Revision History:

No.	Version	Description	Date
1	V1.0	First release	Jun. 28, 2022
2	V1.1	Added the pinout for the pogo pin header	Apr. 10, 2023
3	V1.2	Updated the description of the I/Os as per the design change for GEN 2	Jul. 11, 2023
4	V1.3	Updated the description on the use of the sensors	Jan. 14, 2024
5	V1.4	Updated the pinout of the pogo pin	Nov. 15, 2024

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Foreword

Thank you for purchasing Vantron M10R1 10" rugged industrial tablet ("the tablet" or "the Product"). This manual intends to provide guidance and assistance necessary on setting up, operating, or maintaining the Product. Please read this manual and make sure you understand the structure and functionality of the Product before putting it into use.

Intended Users

This manual is intended for:

- Device owners
- Technical support engineers
- Other users

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Disclaimer

While all information contained herein has been carefully checked to assure its accuracy in technical details and typography, Vantron does not assume any responsibility resulting from any error or features of this manual, nor from improper uses of this manual or the software.

It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without notice.

Technical Support and Assistance

Should you have any question about the Product that is not covered in this manual, contact your sales representative for solution. Please include the following information in your question:

- Product name and PO number;
- Complete description of the problem;
- Error message showing up on the device, if any.

Vantron Technology, Inc.

Address: 48434 Milmont Drive, Fremont, CA 94538

Tel: (650) 422-3128

Email: sales@vantrontech.com

Regulatory Information

The Product is designed to comply with:

- Part 15 of the FCC Rules;

Please refer to **Appendix** for Regulatory Compliance Statements.

Symbology

This manual uses the following signs to prompt users to pay special attention to relevant information.

	Caution for latent damage to system or harm to personnel
	Attention to important information or regulations

General Safety Instructions

For your safety and prevention of damage to the Product, please read and observe carefully the following safety instructions prior to installation and operation. Keep this manual well for future reference.

- Do not disassemble or otherwise modify the Product. Such action may cause heat generation, ignition, electronic shock, or other damages including human injury, and may void your warranty.
- Keep away from heat source, such as heater, heat dissipater, or engine casing.
- Do not insert foreign materials into the USB port or any other opening of the Product as it may cause the Product to malfunction or burn out.
- Use only the adapter, power cord, and batteries that are approved for use with this Product. Otherwise, it may cause fire or explosion.
- Be sure that nothing rests on the power cable and that the cable is located at a place without risk of trips.
- Cut off the power before inspection of the Product to avoid human injury or product damage.

Precautions for Power Cables and Accessories

⚠ Use proper power source only. Make sure the supply voltage falls within the specified range. The Product is designed to use 20V voltage. Always check whether the Product is DC powered before applying power.

⚠ Take care not to drop the Product or place it under high temperature as such actions may cause shorting of the battery and lead to explosion.

⚠ Place the cables properly at places without extrusion hazards.

⚠ Use only approved antenna(s). Non-approved antenna(s) may produce spurious or excessive RF transmitting power which may violate FCC limits.

⚠ Cleaning instructions:

- Power off before cleaning the Product
- Do not use spray detergent
- Clean with a damp cloth
- Do not try to clean exposed electronic components unless with a dust collector

⚠ Power off and contact Vantron technical support engineer in case of the following faults:

- The Product is damaged
- The temperature is excessively high
- Fault is still not solved after troubleshooting according to this manual

⚠ Do not use in combustible and explosive environment:

- Keep away from combustible and explosive environment
- Keep away from all energized circuits
- Unauthorized removal of the enclosure from the device is not allowed
- Do not change components unless the power cable is unplugged
- In some cases, the device may still have residual voltage even if the power cable is unplugged. Therefore, it is a must to remove and fully discharge the device before replacement of the components.

CHAPTER 1 INTRODUCTION

1.1 Product Overview

Vantron M10R1 high-performance rugged industrial tablet was designed for industrial applications, especially in healthcare, plant walk-down, law enforcement patrol, and prison automation. The device is powered by Intel® ATOM multi-core processor with a 10-inch full HD capacitive touch screen with a resolution of 1920 x 1200 to offer excellent human-machine interaction experience.

While featuring flexible specification options, large capacity battery, and out-performing power management system, it is fully rugged with IP65 water resistance and 1.5m drop resistance design to protect the device from damage in the event of fluid spill or accident drop. Its high-brightness display ensures optimal outdoor performance and the large capacity battery is more than enough to get through a day of work.

The tablet offers a built-in barcode scanner for capturing data from a barcode or QR code and converting it into readable information that can be directly processed, stored, or transmitted by the application on the tablet, making it suitable for inventory management, asset tracking, or data entry.

1.2 Unpacking

The tablet has been carefully packed with special attention to quality. However, should you find anything damaged or missing, please contact your sales representative in due time.

- M10R1 10” rugged industrial tablet
- USB Type-C power adapter
- USB cable

Actual accessories might vary slightly from the list above as the customer order might be different from the standard configuration options.

The plastic film will protect the screen during installation, only remove the film after installation.

1.3 Specifications

M10R1			
System	CPU	Intel® ATOM x5-E3940	
	Memory	4GB LPDDR4 (Optional: 8GB)	
	Storage	128GB (Optional: 256GB) 1 x M.2 B-Key slot for SSD expansion	
Communication	Wi-Fi & Bluetooth	Wi-Fi 802.11 a/b/g/n/ac + BT 5.1	
	Cellular	2G, 3G, 4G	
	GNSS	GPS + BeiDou + GLONASS + Galileo, AGPS supported, built-in antenna	
	NFC	Linux system: Supported; Windows system: Optional	
Media	Display	10” 16:10 IPS panel	
		Resolution	1920 x 1200
		Brightness	600 nits
		Contrast Ratio	1000:1
		Viewing Angle	Horizontal: ±85° or 170° total / Vertical: ±85° or 170° total
	TP	10-point G + G PCAP touch screen Surface hardness: 6H Finishing process: Toughening	
	Camera	Front camera	2MP, fixed focus, with working indicator
		Rear camera	8MP, auto focus, with flash
	Audio	1 x 4Ω/2w speaker 1 x 3.5mm combo audio jack, debugging supported 1 x Mic	
I/Os	USB	1 x USB 3.0 Type-A	1 x USB 2.0 Type-C
	Built-in barcode scanner	Bar width	> 8Mil
		Pixel	> 640 x 480
	Extended display	1 x Mini HDMI	
	Pogo pin	2 x 10-pin, supporting CAN J1939, USB 3.0, 100Mbs Ethernet RJ45, Audio Jack, RS232/RS485 Combo, TJA1100HN 100Base-T1 PHY	
	SIM slot	1 x Nano SIM slot	
	Security	1 x TPM 2.0	
Sensor	Light sensor	1 x Light sensor	
	Gyro-sensor	1 x Gyro-sensor	
	G-Sensor	1 x G-sensor	
System Control	Button	1 x Power button 3 x Function button	
	LED indicator	1 x System status / Battery condition	

1.3 Specifications (Cont'd)

M10R1			
Software	OS	Windows 10 ITSC 2019, Linux	
Power	Input	USB Type-C power input (20V adapter required)	
	Battery	6000mAh/7.6V, 8 hours working time*	
Mechanical	Material	PC, ABS	
	Dimensions	293.6mm x 191mm x 29.1mm	
	Net weight	850g	
Performance Standard	IP rating	IP65	
	Drop test	MIL-STD-810H, drop from 1.5m onto a plywood surface over concrete on 6 sides	
	Vibration	MIL-STD-810H: Method 516.8, Procedure I Operating: 20G, Idle: 40G	
	Thermal shock	MIL-STD-810H: Method 503.7 Operating: -20°C ~+60°C, Idle: -30°C ~+70°C	
	Solar radiation	MIL-STD-810H: Method 505.7	
	Liquid pollution	MIL-STD-810H: Method 504.3	
Environment Condition	Temperature	Operating: -20°C ~+60°C	Storage: -30°C ~+70°C
	Humidity	RH 5%-95% (Non-condensing)	
	Certification	MIL-STD-810H ISED	FCC (FCC Part 15 Class B) ESD (Contact: ±4KV, Air: ±8KV)

* Source: Test with 1080p video play at 50% volume and 200 nits brightness.

1.4 Product Layout

Front view

Description of the I/Os:

No.	Item	Description	
1	Camera indicator	Serve as a visual cue when the camera is in use or active	
2	Light sensor	Automatic adjustment of display brightness	
3	Front camera	2MP, fixed focus, with working indication	
4	Battery level indicator	Red: less than 10% battery	
		Green: battery fully charged	
		Blue: battery charging and switches to solid green when the battery is fully charged	
5	Microphone	Used for phone calls or voice recording	
6	10” LCD display	16:10 IPS LCD, 1920 x 1200, 600 nits	
	Touch panel	10-point G + G PCAP touchscreen	
7	Power button	Long press (about 3 seconds) to turn off the device	
		Short press to turn on/off the screen or turn on the device	
8	Function button	Airplane mode	User definable
9		LCD backlight up	
10		LCD backlight down	

Back view

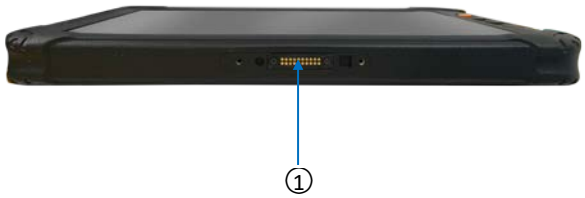
Description of the I/Os:

No.	Item	Description
1	Scanner flash	Provide additional illumination when scanning the codes in low light or dark environments
2	Barcode scanner	Capture data from 1D, 2D barcodes
3	Camera flash	Provide additional light for photo taking when the ambient light is insufficient
4	Rear camera	8MP, auto focus
5	Speaker	4Ω/2w speaker for audio output

Top view

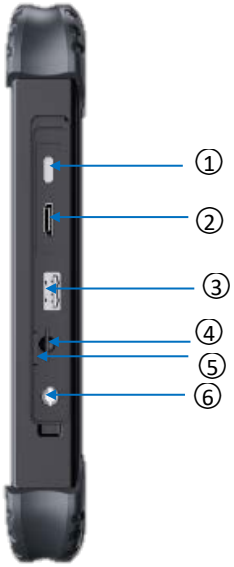
No.	Item	Description
1	Volume + button	Increase the media playing volume
2	Volume - button	Decrease the media playing volume

Bottom view



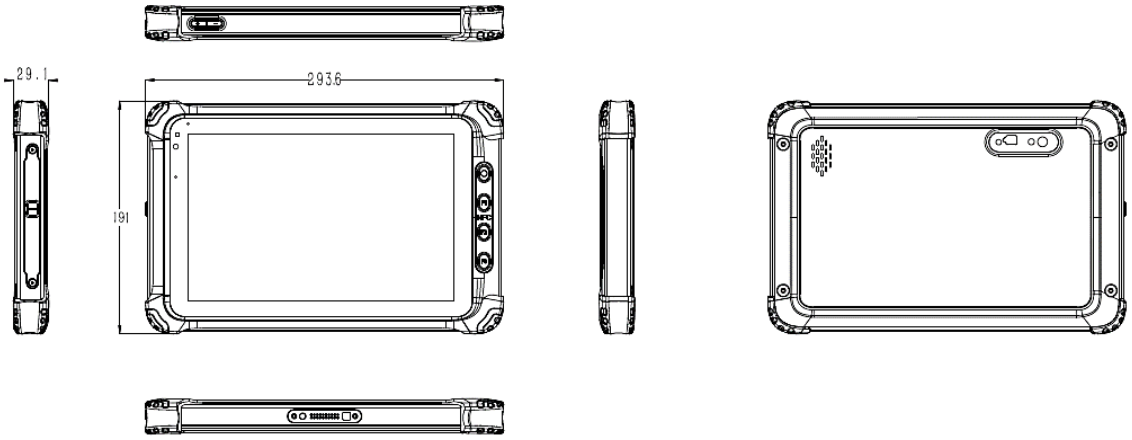
No.	Item	Description
1	Pogo pin	Populated from the motherboard for providing additional signals to connect peripherals

Left side view



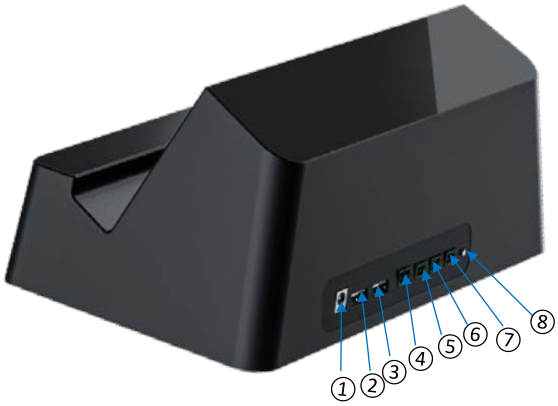
No.	Item	Description
1	USB Type-C	USB 3.0 Type-C (charge, data transmission)
2	Mini HDMI	Connect an external display
3	USB Type-A	USB 2.0 Type-A
4	Nano SIM slot	Hold a Nano SIM card for cellular communication
5	TF slot	Store a TF card for expansion of the storage
6	Audio jack	Connect a headphone or external speaker, etc.

1.5 Product Outlines



1.6 Vantron VDS10 Docking Station

Vantron offers VDS10 docking station that is compatible with the M10R1 to provide power and user expansion. VDS10 weighs 800g and operates at -20°C to +60°C.



Description of the I/Os:

No.	Description
1	Power jack (DC 12V ± 10%)
2	USB 3.0 Type-A
3	(Current limit: 1A/5V)
4	Ethernet jack
5	RS232
6	RS485
7	CAN
8	Sleep/wakeup button

*VDS10 is **NOT** a standard accessory included in the shipping package. Users can purchase one based on needs.*

CHAPTER 2 GETTING STARTED

2.1 Setting up the Device

After you have confirmed that nothing is damaged or missing in the package, it is recommended that you follow this section to set up the device as necessary.

2.1.1 Battery

The battery pack is not removable and is installed before shipment, so users do not need to install it on their own.

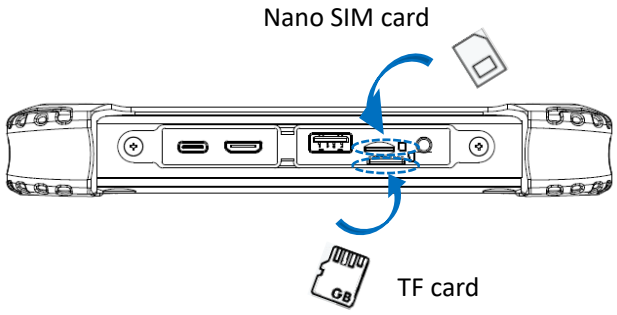
There is no additional requirement for battery charge before first use of the tablet. You can use it straightly out of box as long as it has a charge, and charge it when needed.

To charge M10R1, use the power adapter and cable provided or use a docking station with an appropriate power supply (e.g., Vantron VDS10 docking station).

The battery is design to support at a minimum of 1,000 charge cycles.

2.1.2 Installing and Removing a SIM card/TF card

1. Place M10R1 on its back (with screen facing up);
2. Open the longer I/O cover located on the left side of the tablet;
3. Insert an activated Nano SIM card into the SIM slot with the gold contact facing down and the cut-off corner facing in;
4. Push the card in until it clicks into place;
5. Insert a TF card, if any, into the TF slot with the gold contact facing up;
6. Push the card in until it clicks into place;

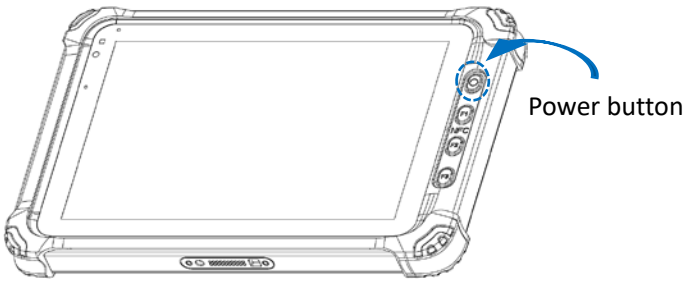


7. To remove the Nano SIM/TF card, gently push it again and it will eject from the slot;
8. Close the I/O cover.

2.1.3 Turning on/off the device

- **Using the power button**

A long press of the power button located on the right side of M10R1 about 3 seconds will turn off the device, while a brief press of the power button will turn it on. There will be an audio prompt when the system is starting up.



Do not press the power button repeatedly in short time.

Do not connect or disconnect the charger while the device is booting up.

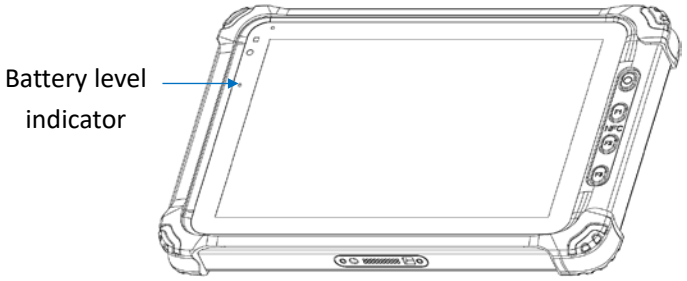
- **Using the device GUI**

After the tablet is turned on, you can choose to use the device GUI to properly turn it off.

1. Make sure there is no running application;
2. Tap on Windows **Start** at the bottom left corner;
3. Tap on the power icon ;
4. Select shut down;
5. Wait for the device to power off.

2.1.4 Battery level indicator

There is an LED indicator on the front panel for indication of the battery condition and system status.



Indicator	Charging status	Description
Red	Not charging	< 10% battery
Blue	Charging	NA
Green	Not charging	System running
	Charging	Fully charged

2.2 I/O Description

This section details the hardware I/Os on the tablet.

2.2.1 Display

The 10-inch LCD screen is made of a display screen and a touch screen which are bonded together using the air bonding technology.

Specifications		Details
Display Screen	Diagonal Size	10.1"
	Aspect Ratio	16:10
	Viewing Angle	Horizontal: 170° / Vertical: 170°
	Resolution	1920 x 1200
	Contrast Ratio	1000:1
	LCM Luminance	600 nits
Touch Screen	Touch Points	10-point
	Touchscreen Technology	PCAP technology
	Structure	G + G

2.2.2 Mini HDMI

The Mini HDMI port is for connecting an external monitor for displaying in duplicate/extended mode. It supports a resolution up to 1920 x 1200.

To connect an HDMI device, simply plug the Mini HDMI cable into the Mini HDMI connector of the tablet.

2.2.3 USB Type-C

The USB 3.0 Type-C port on the device supports up to 60W PD charging using adapters with 20V output at 3A. Additionally, it features USB On-The-Go (OTG) functionality, allowing you to debug the device through this port.

To connect a host computer, simply plug the USB Type-A to USB Type-C cable into the USB Type-C port of the tablet.

2.2.4 USB Type-A

The USB 3.0 Type-A port allows users to connect peripherals such as a digital camera, keyboard, printer, and flash disk drive for extended use.

To connect a USB device, simply plug the USB Type-A to USB Type-A cable into the USB Type-A port of the tablet.

2.2.5 Audio jack

The device offers a 3.5 mm combo audio jack that is compatible with four-section headphones for audio input/output.

2.2.6 Speaker

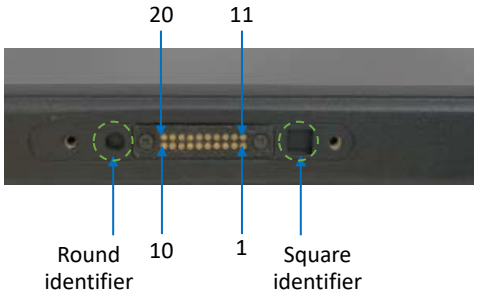
The device offers a 4Ω/2W speaker for audio output.

2.2.7 Buttons

There are four buttons on the tablet, including one power button in orange and three user-defined buttons.

2.2.8 Pogo pin

The pogo pin offers a convenient and efficient way to allow users to establish connections between the peripherals and the tablet.



Pinout description:

Pin	Name	Type	Description
1	POGO_Power_IN_CON	P	Supports 20V power input
2	NC		
3	POGO_USB_3.0_TX_P_CON	I/O	USB3.0 Transmit differential positive
4	GND	G	Ground
5	POGO_USB_3.0_RX_P_CON	I/O	USB3.0 Receive differential positive
6	GND	G	Ground
7	POGO_USB2.0_DP_CON	I/O	USB2.0 Host data
8	GND	G	Ground

9	NC		
10	POGO_Power_IN_CON	P	Supports 20V power input
11	POGO_Power_IN_CON	P	Supports 20V power input
12	NC		
13	POGO_USB_3.0_TX_N_CON	I/O	USB3.0 Transmit differential negative
14	GND	G	Ground
15	POGO_USB_3.0_RX_N_CON	I/O	USB3.0 Receive differential negative
16	GND	G	Ground
17	POGO_USB2.0_DN_CON	I/O	USB2.0 Host data
18	GND	G	Ground
19	NC		
20	POGO_Power_IN_CON	P	Supports 20V power input

CHAPTER 3 WINDOWS SYSTEM MANUAL

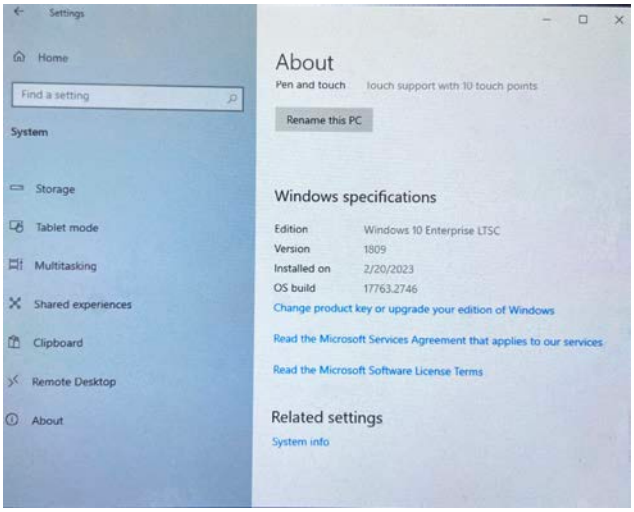
3.1 Operating the Device

This section describes how to operate M10R1, including the device information, device settings, and network connection.

3.1.1 Device information

To access the device information:

1. Tap on Windows **Start** at the bottom left corner, then tap on the cog icon ⚙ to open **Windows Settings** menu;
2. Tap on **System** and move to the bottom of the menu;
3. Tap on ⓘ **About** to view the details of the device, including security information, device specifications, Windows specifications, and other related settings. You can edit the device name using the **Rename this PC** button.

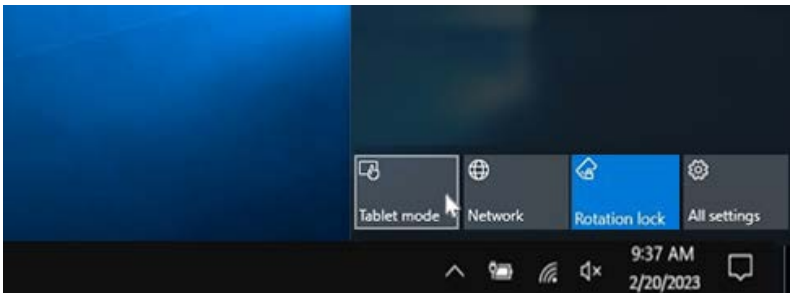


3.1.2 Turning on the tablet mode

Tablet mode makes Windows 10 more touch-friendly when using a tablet or touch enabled laptop. The Tablet mode is off by default.

Select any of the following options to turn on the Tablet mode:

- Tap on **Start > Settings > System > Tablet mode** in sequence, and select how you would like to enable the tablet mode.
- Tap on the **action center** on the taskbar and enable **Tablet mode**.
- Swipe in from the right edge of the screen to open the **action center**, then enable **Tablet mode**.
- Press the Window key + **A** on the external keyboard connected to M10R1 to open the **action center**, then enable **Tablet mode**.



3.1.3 Connecting to a wireless network

1. Tap on **Start > Settings**;
2. Select **Network & Internet** and tap on the **Wi-Fi** option to enable it;
3. Choose the Wi-Fi network you want to join and tap on **Connect**;
4. Enter the network password and wait for the tablet to connect to the network.

3.1.4 Using the cellular network

1. Follow the instructions in 2.1.2 to install an activated Micro SIM card into the device;
2. Tap on **Start > Settings**;
3. Select **Network & internet** and tap on the **Cellular** option to enable it and connect to the mobile network.

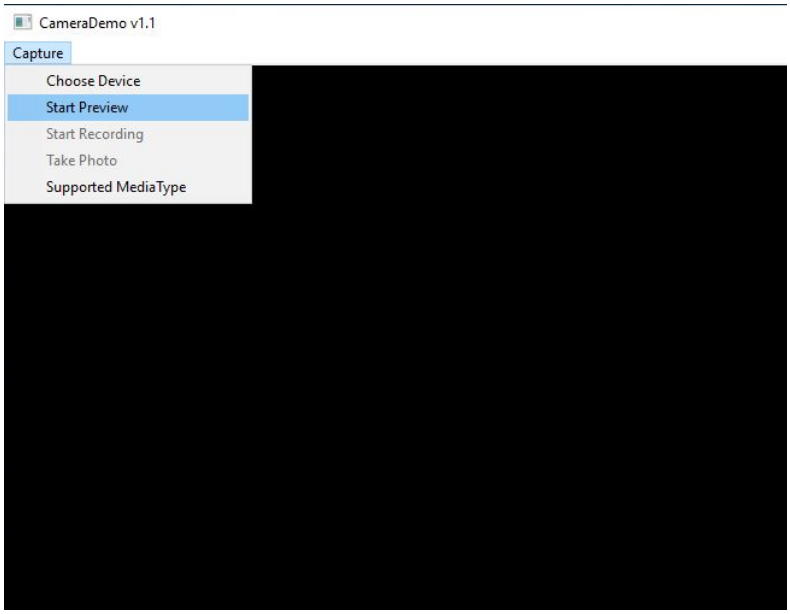
3.2 Featured Functions

This section introduces the featured functions that M10R1 offers, including the camera, barcode scanner, sensors and buttons.

Vantron provides simple applications for using the features mentioned. To properly use M10R1, please copy the \4 SW Guide folder from the software package, which includes the applications, to the device first.

3.2.1 Camera

Open the camera application **CameraDemo.exe** that is included in the path: \4 SW Guide\Camera to use the camera.



Choose Device: to switch between the front and rear cameras

Start Preview: to preview the image captured by the camera

Start Recording: to record videos after preview

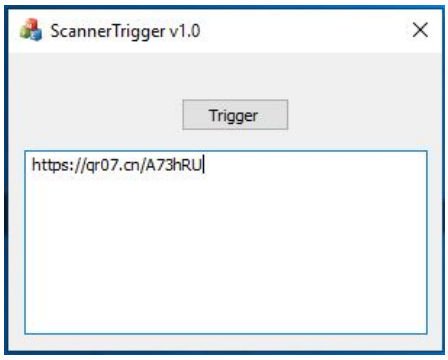
Take Photo: to take a photo after preview

Supported Media Type: to check the resolutions supported by the device

The recording and photographing features will not be enabled until preview is active. You can tap on the “X” icon to close the window and disable the camera.

3.2.2 Barcode scanner

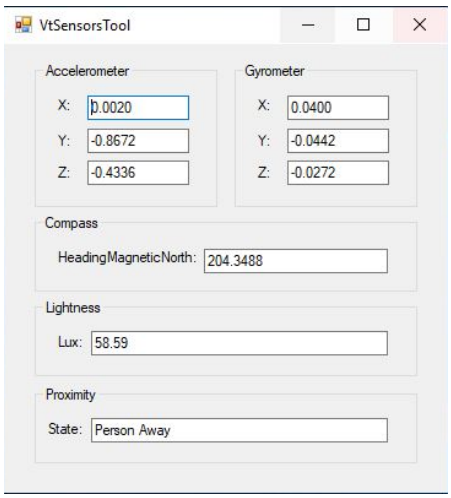
Open the scanner application **ScannerTrigger_v1.0.exe** that is included in the path: \4 SW Guide\Scanner\ScannerTrigger_v1.0.zip to use the scanner. This application requires administrator privilege.



1. Tap on the **Trigger** button to enable the scanner;
2. Once enabled, the scan task will be performed automatically;
3. If no valid code is detected within 10 seconds, the scan task will end.

3.2.3 Sensors

The tablet supports G-sensor (accelerometer), Gyrosensor, light sensor, and proximity sensor functions, and GNSS navigation. To test the sensors, open the application **VtSensorsTool.exe** located in the \4 SW Guide\Sensor folder.



The proximity sensor will prompt “Person Approaching” when someone approaches the tablet and “Person Away” when they leave.

3.2.4 Function buttons

The tablet is equipped with 3 function buttons, F1 for airplane mode, F2 for increasing the LCD backlight, and F3 for decreasing the LCD backlight. The buttons can be customized as required and this may involve modifications to the BIOS and EC.

3.3 BIOS

BIOS initializes hardware like CPU and memory, and saves hardware settings for installation and loading of the operating system (OS).

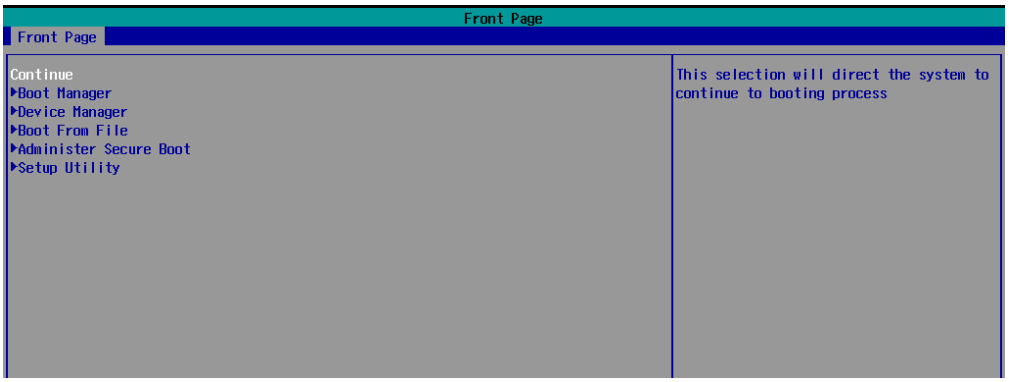
Users may need to run BIOS Setup program when:

- An error message appears suggesting that the user should run BIOS Setup;
- Default settings need to be customized.

Please be aware that BIOS will be under continuous update for better system performance, therefore the description in this chapter might vary slightly and is for reference only.

3.3.1 BIOS configuration

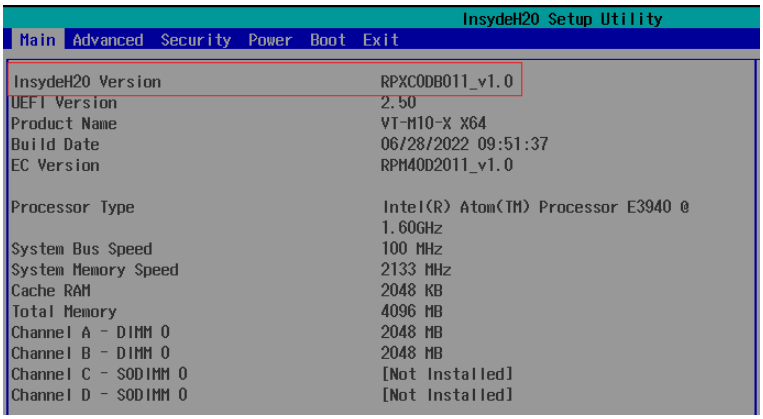
1. Turn on the tablet and it will enter the boot process;
2. Press **ESC,** if you have connected a keyboard, or press the volume + key, during the system bootup to enter the BIOS configuration page;



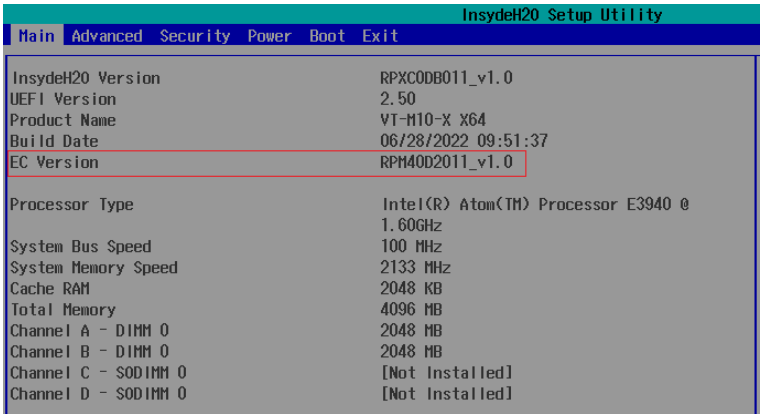
Description of the options:

Option	Description
Continue	Proceed with the booting process
Boot Manager	View all boot devices, including USB drives, SSD, etc.
Boot From File	Choose to boot from an internal file, only for EFI partition
Administer Secure Boot	Configure the secure boot function, which can prevent or allow the specified system to boot
Setup Utility	Overview of all BIOS setup options. You must be very careful when modifying the default settings.

3. You can check the BIOS version of the device after accessing the BIOS configuration page by navigating to the **Setup Utility** > **Main** menu;



4. Other information such as the EC version is also available on the same page.



3.3.2 Setup Utility – Main

- Language: You can select from English, French, Chinese, and Japanese for system language.
- System Time: The time format is <Hour>: <Minute>: <Second>.
- System Date: The date format is <Month>/ <Day>/<Year>.

3.3.3 Setup Utility – Advanced

- Boot Configuration: You can select the operating system that you would like the device to run on.
- Uncore Configuration: You can customize the video settings, GOP settings, IGD settings, and IPU PCI device settings here.
- South Cluster Configuration: This page provides configuration options for audio, GMM, ISH, LPSS, PCIe, SATA, SCC, USB, Timer, etc.
- Security Configuration: TPM device settings are made here.
- Thermal Configuration: Thermal management settings are customized here.
- System Component: Spread spectrum clocking configurations could be accessed from here.
- Debug Configuration: You can enable/disable the debugger here.
- Memory System Configuration: You can enable/disable the memory scrambler and other memory-related settings here.
- ACPI Table/Features Control: This option allows you to enable/disable S4 wakeup from RTC (only available for ACPI).
- SEG Chipset Feature: This option allows you to enable/disable wakeup on USB from S5 state.
- OEM Configuration: LVDS configurations are available to change.
- SIO SCH 3222: Serial ports are configured here.
- H2OUVE Configuration: You can enable/disable the configuration interface of H2OUVE tool.

3.3.4 Setup Utility – Security

- Information of current TPM device is available here and you can set the supervisor passwords as well.

3.3.5 Setup Utility – Power

- CPU configurations are customizable.
- Options for wakeup on PME/RTC from S5 are available.

3.3.6 Setup Utility – Boot

- Users can set the boot mode, the sequence, timeout, and automatic failover of boot devices when BIOS attempts to load the operating system.
- When users want to maintain or install the system for multiple devices without inserting a CD or USB into such devices one by one, PXE boot can be an option to install the system.

3.3.7 Setup Utility – Exit

- Options for users to load or exit BIOS Setup include loading system optimal defaults or loading custom settings, exiting with custom changes save or not saved.

CHAPTER 4 IMAGE FLASHING

Whenever a new image is available, Vantron will provide a release package consisting of all the tools/files necessary so that you can flash the image in a Windows host.

4.1 Prerequisites

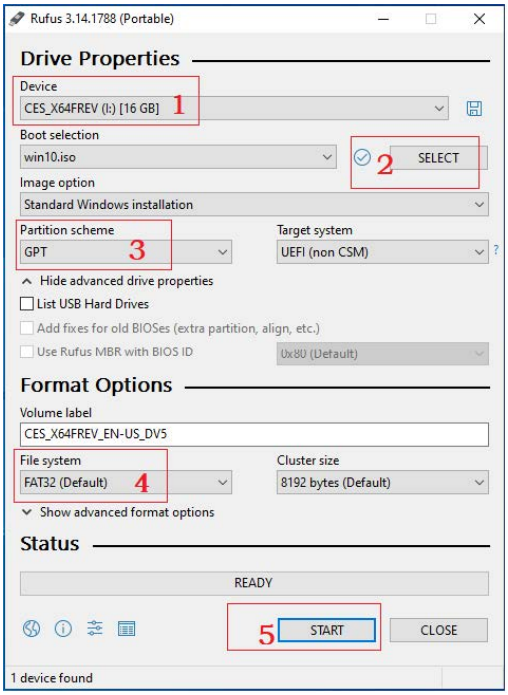
- A USB drive with capacity no less than 8GB, preferably supporting USB 3.0
- Release package of M10R1
- A program for making the bootable device: rufus-xxx .exe (path in the release package: \Win10 Image)
- Windows 10 image (path in the release package: \Win10 Image)
- A host computer running Windows system
- A USB Type-A to Type-C cable

4.2 Make a Bootable USB Drive

Plug the USB drive into the host PC. Run rufus-xxx .exe and it will automatically detect the USB. Then follow the steps below to make a bootable USB drive on the Rufus window.

1. Click on **Device** and choose the USB you want to use from the drop-down;
2. Select the ISO image you want to burn onto the USB from the drop-down and click **Select**;
3. Generally, users would like to create a **Standard Windows installation**, and Rufus will automatically detect the correct **Partition Scheme** based on the USB drive. Yet make sure the partition scheme is **GPT**;
4. Set the Target system as **UEFI** and the File system as **FAT32** or **NTFS**;

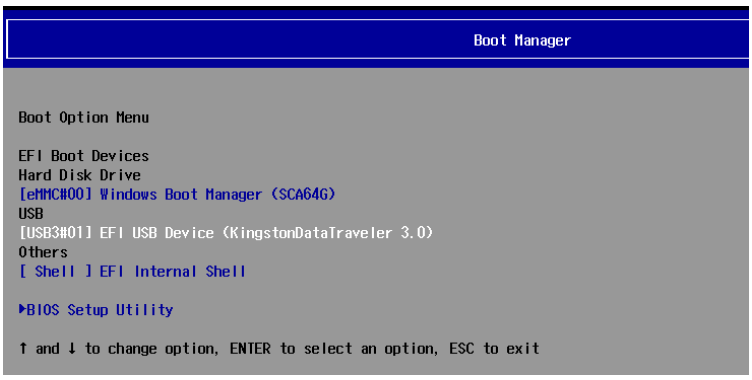
5. Click **START** to make the bootable USB drive.



6. Unplug the USB drive from the host computer after the bootable device is successfully made.

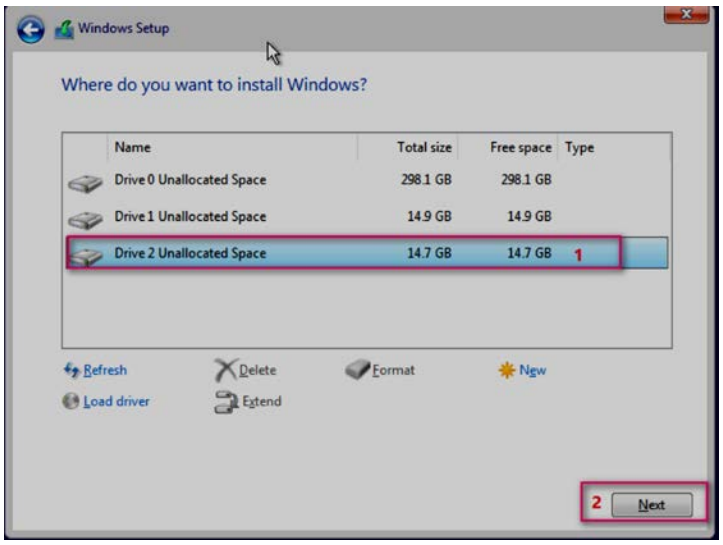
4.3 System Installation

1. Plug the bootable USB drive into M10R1;
2. Power on the device and it will enter the boot process;
3. Press **ESC,** if you have connected a keyboard, or press the volume + key, during the system bootup to enter the BIOS configuration page;
4. Navigate to **Boot Manager** in the configuration page;
5. Select the bootable USB drive you created for Windows 10 and press **ENTER**;



6. Wait until the “Where do you want to install Windows” page appears on the Windows Setup window;
7. Tap on **Delete** to remove all partitions from the target disk on the M10R1 device to ensure clean installation;

   Make sure you have backed up the data in the disk before deleting the partitions because system installation will format the disk.
8. After deleting all partitions of the target disk, select it and click **Next** to proceed;



9. Wait patiently until a shortcut of Windows 10 appears on the desktop, indicating the completion of the installation.

   If the Windows Setup window does not appear, just follow the wizard to complete the installation.

CHAPTER 5 DISPOSAL AND WARRANTY

5.1 Disposal

When the device comes to end of life, you are suggested to properly dispose of the device for the sake of the environment and safety.

Before you dispose of the device, please back up your data and erase it from the device.

It is recommended that the device is disassembled prior to disposal in conformity with local regulations. Please ensure that the abandoned batteries are disposed of according to local regulations on waste disposal. Do not throw batteries into fire or put in common waste canister as they are explosive. Products or product packages labeled with the sign of “explosive” should not be disposed of like household waste but delivered to specialized electrical & electronic waste recycling/disposal center.

Proper disposal of this sort of waste helps avoid harm and adverse effect upon surroundings and people’s health. Please contact local organizations or recycling/disposal center for more recycling/disposal methods of related products.

5.2 Warranty

Product warranty

VANTRON warrants to its CUSTOMER that the Product manufactured by VANTRON, or its subcontractors will conform strictly to the mutually agreed specifications and be free from defects in workmanship and materials (except that which is furnished by the CUSTOMER) upon shipment from VANTRON. VANTRON's obligation under this warranty is limited to replacing or repairing at its option of the Product which shall, within **12 months or 24 months** depending on the Product after shipment, effective from invoice date, be returned to VANTRON's factory with transportation fee paid by the CUSTOMER and which shall, after examination, be disclosed to VANTRON's reasonable satisfaction to be thus defective. VANTRON shall bear the transportation fee for the shipment of the Product to the CUSTOMER.

Out-of-Warranty Repair

VANTRON will furnish the repair services for the Product which are out-of-warranty at VANTRON's then-prevailing rates for such services. At customer's request, VANTRON will provide components to the CUSTOMER for non-warranty repair. VANTRON will provide this service as long as the components are available in the market; and the CUSTOMER is requested to place a purchase order up front. Parts repaired will have an extended warranty of 3 months.

Returned Products

Any Product found to be defective and covered under warranty pursuant to Clause above, shall be returned to VANTRON only upon the CUSTOMER's receipt of and with reference to a VANTRON supplied Returned Materials Authorization (RMA) number. VANTRON shall supply a RMA, when required within three (3) working days of request by the CUSTOMER. VANTRON shall submit a new invoice to the CUSTOMER upon shipping of the returned products to the CUSTOMER. Prior to the return of any products by the CUSTOMER due to rejection or warranty defect, the CUSTOMER shall afford VANTRON the opportunity to inspect such products at the CUSTOMER's location and no Product so inspected shall be returned to VANTRON unless the cause for the rejection or defect is determined to be the responsibility of VANTRON. VANTRON shall in turn provide the CUSTOMER turnaround shipment on defective Product within **fourteen (14) working days** upon its receipt at VANTRON. If such turnaround cannot be provided by VANTRON due to causes beyond the control of VANTRON, VANTRON shall document such instances and notify the CUSTOMER immediately.

Appendix Regulatory Compliance Statements

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Exposure to radio frequency energy:

The radiated output power of this device meets the limits of FCC radio frequency exposure limits. This device should be operated with a minimum separation distance of 20cm (8 inches) between the equipment and a person's body.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

ESD Precautions

The Tablet contains highly sensitive electronic circuitry and is an Electrostatic Sensitive Device (ESD). Handling the Tablet without proper ESD protection may destroy or damage it permanently. Proper ESD handling and packaging procedures must be applied throughout the processing, handling and operation of any application that incorporates the Tablet. ESD precautions should be implemented on the application board where the B series is mounted. Failure to observe these precautions can result in severe damage to the Tablet!

Heat Related Concerns

Your device may become very warm during normal use. It complies with the user-accessible surface temperature limits defined by the International Standards for Safety. Still, sustained contact with warm surfaces for long periods of time may cause discomfort or injury. To reduce potential heat-related concerns, follow these guidelines:

- Keep your device and its adapter in a well-ventilated area when in use or charging. Allow for adequate air circulation under and around the device.
- If your device is used for long periods, its surface can become very warm. While the temperature may not feel hot to the touch, if you maintain physical contact with the device for a long time, for example if you rest the device on your lap, your skin might suffer a low-heat injury.
- If your device is on your lap and gets uncomfortably warm, remove it from your lap and place it on a stable work surface.
- Never place your device or the adapter on furniture or any other surface that might be marred by exposure to heat since the base of your device and the surface of the adaptor may increase in temperature during normal use.