

Vehicle Mounted Computer

Intel Elkhart Lake x6425E Processor, 2.0 GHz



FM12E

Quick Start Guide

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**NOTE:**

Display images shown may vary slightly from actual display. Information in this manual is subject to change without prior notification.

**NOTE:**

FM12E Computer has to be used together with the docking station.

Use the device when located at least 20 cm (7.9 inches) away from the human body.

Disclaimer

Wimate Inc. reserves the right to make any product changes without notice, including circuits and/or software described or contained in this manual in order to improve design and/or performance. Wimate Inc. assumes no responsibility or liability for the use of the described product (s), conveys no license or title under any patent, copyright, or masks work rights to these products, and makes no representations or warranties that these products are free from patent, copyright, or mask work right infringement, unless otherwise specified. Applications that are described in this guide are for illustration purposes only. Wimate Inc. makes no representation or warranty that such application will be suitable for the specified use without further testing or modification.

Warranty

Wimate Inc. warrants that each of its products is free from material and workmanship defect for a period of one year starting from the invoice date. If the customer discovers a defect, Wimate Inc. will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service.

FCC Regulations

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.

This device 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 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 technician for help.

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

Operation on the 5.15-5.25GHz frequency band is restricted to indoor use only. The FCC requires indoor use for the 5.15-5.25GHz band to reduce the potential for harmful interference to co-channel Mobile Satellite Systems. Therefore, it will only transmit on the 5.25-5.35 GHz, 5.47-5.725 GHz and 5.725 –5.850 GHz band when associated with an access point (AP).

CE Notice (European Union)

This device has been tested and found to conform to the limits set for a Class B product.

- EN 55022 — “Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment”
- EN 55024 — “Information technology equipment - Immunity characteristics - Limits and methods of measurement”
- EN 61000-3-2 — “Electromagnetic compatibility (EMC) - Part 3: Limits - Section 2”
- EN 61000-3-3 — “Electromagnetic compatibility (EMC) - Part 3: Limits - Section 3”
- EN 60950 — “Safety of Information Technology Equipment”.
- EN 55022 Emissions requirements

RF Exposure Information (SAR)

This device is compliance with SAR for general population /uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device was tested for operations with the device contacted directly to the human body to the back side of the EUT. To maintain compliance with FCC RF exposure compliance requirements, avoid direct contact to the transmitted antenna during transmitting.

IC Regulations

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES-003

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems; the maximum antenna gain permitted (for devices in the bands 5250-5350 MHz and 5470-5725 MHz) to comply with the e.i.r.p. limit; and The maximum antenna gain permitted (for devices in the band 5725-5850 MHz) to comply with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate, as stated in section A9.2(3). In addition, High-power radars are allocated as primary users (meaning they have priority) of the band 5250-5350 MHz and this radar could cause interference and/or damage to LE-LAN devices.

The County Code Selection feature is disabled for products marketed in the US/Canada. For product available in the USA/ Canada markets, only channel 1~11 can be operated. Selection of other channels is not possible.

IC Radiation Exposure Statement

This EUT is compliance with SAR for general population/uncontrolled exposure limits in IC RSS-102 and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528.

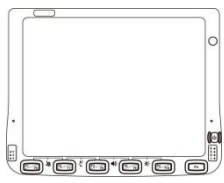
General Guideline

It is recommended to reboot the device when some functions are defect or inactive. If it still can't solve the problems, please contact your dealer or agent.

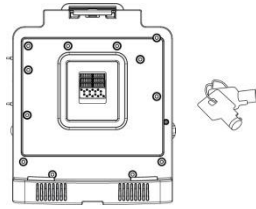
1. Unpacking

1.1 Package Contents

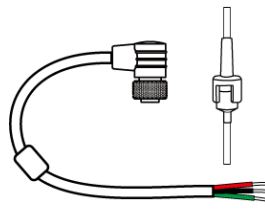
Before using this device, make sure that all the items listed below are present in your package:



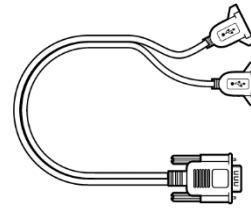
Computer FM10



Dock + Latch Locking Key



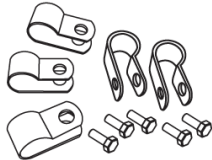
Power Cable with Fuse Kit



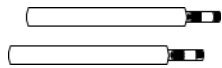
USB Cable



Power Converter Cable



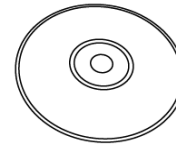
Cable Clamp Kit



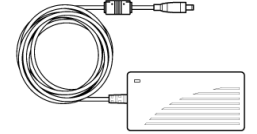
WLAN Antenna x 2



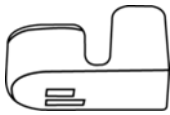
Quick Start Guide



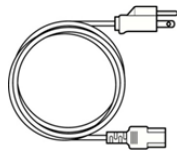
Driver CD



84W Adapter with power cable



External Antenna Fixing Bracket



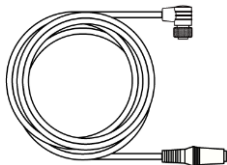
Power Cord



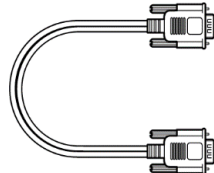
Stylus Kit

1.2 Optional Accessories

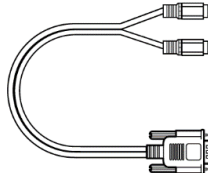
Your package may include the following items based on your order:



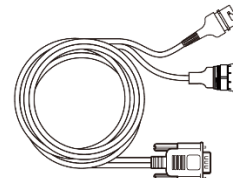
DC Jack Power Cable



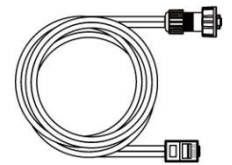
RS232 Cable



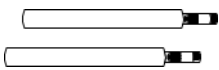
Audio Cable



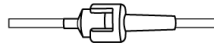
CAN BUS Y Cable



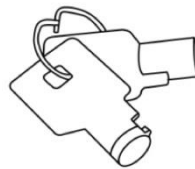
IP65 LAN Cable



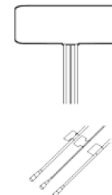
WWAN Antenna x 2



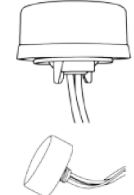
15A, 250V, VDA Type Fuses



Spare Key for Vehicle Dock



GPS & LTE 2M Combo Antenna (VM240)



GPS & LTE 5M Combo Antenna (VM9C)



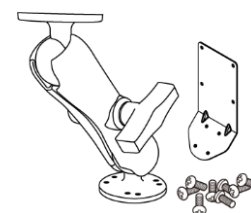
GPS, LTE, WLAN Magnetic Combo Antenna (VM10S)



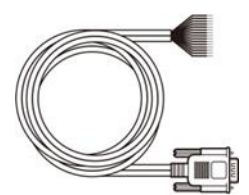
Mounting Kit 1 No Drill



Mounting Kit 2 Drill



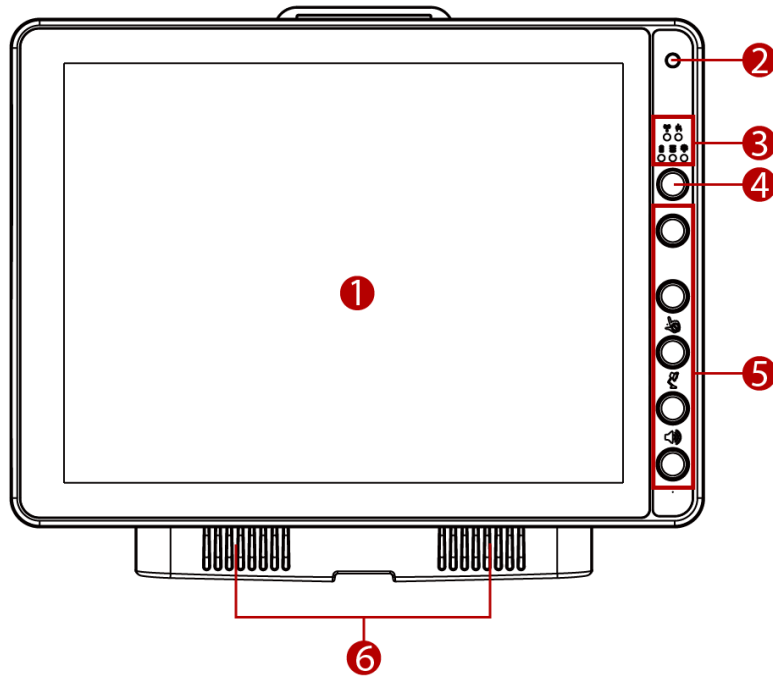
Mounting Kit 3 Keyboard Mounting








CANBus cable

2. Components

2.1 Front View



No	Item	Description
1	12.1" Touch Screen	Acts as one of the inputs for the device
2	Camera and Microphone	2 Megapixel front camera with a microphone for voice communication and voice recording
3	Light Sensor and LED indicators	 Wireless communication indicators
		 Heater indicators
		 UPS Battery Indicators
		 HDD indicators
		 Light sensor
4	Power Button and Indicator	Press and hold the button for 3 second to turn on the device
5	Function buttons	Programmable Function keys that can be configured by using the Win-Set® Utility
	Digital Microphone	For voice communication and voice recording
6	Speaker	Emits Sound

The integrated keypad contains ten programmable keys, F1~ F8 are user programmable keys. Key Mapping is configured via the Win-Set® utility on the control panel. See Programmable key to remap these keys.

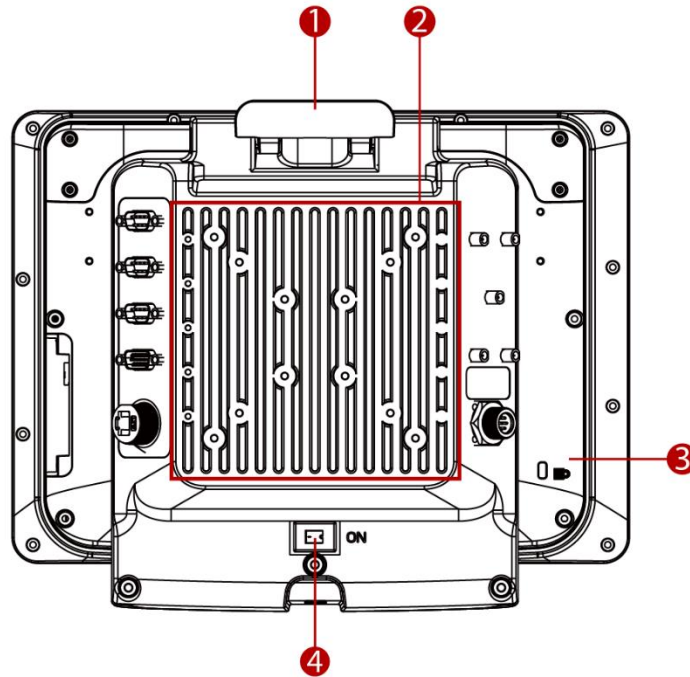
The default values for these keys are:

Press these keys in this order	Default Key Value
F1+F2	Touch Keypad Lock/Unlock
F2+F3	Brightness adjustment (Panel+keypad)
F3+F4	Volume adjustment
Long press on F1	Open WinSet
Long press on F2	RF Hot Tab Function
Long press on F3	Lamp On/Off
Long press on F4	Camera
Press on Fn	Function key form F5~F8

*Sign plus “+” means that you have to press both function keys at the same time.

To Get this Programmable Key	POST Key
F1 (Programmable Key 1)	Recovery
F2 (Programmable Key 2)	ESC
F3 (Programmable Key 3)	Enter
F4 (Programmable Key 4)	F4 Key
F5 (Programmable Key 5)	Up Key
F6 (Programmable Key 6)	Down Key
F7 (Programmable Key 7)	Left Key
F8 (Programmable Key 8)	Right Key

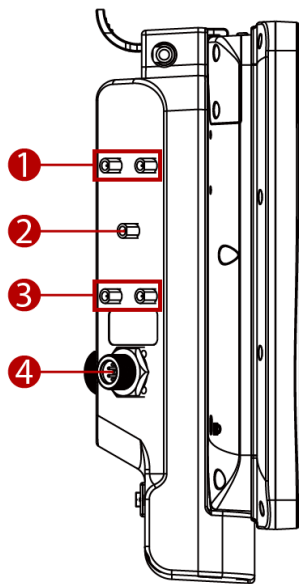
2.2 Rear View with Vehicle Dock



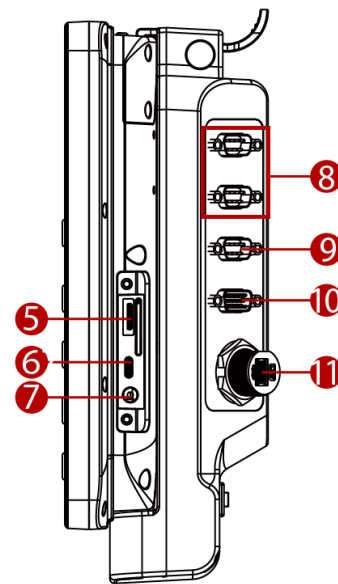
No	Item	Description
1	Release Latch	Press to release the device and the docking
2	VESA Mount Hole	VESA 75, 100, and RAM Mount
3	Kensington Lock	Connect to a security lock, protecting your device from being stolen
4	Power switch	Set the switch to on (I) to provide the supply power to the device and it will automatically connect to the ignition system of the vehicle

2.3 Side View with Vehicle Dock

Left Side



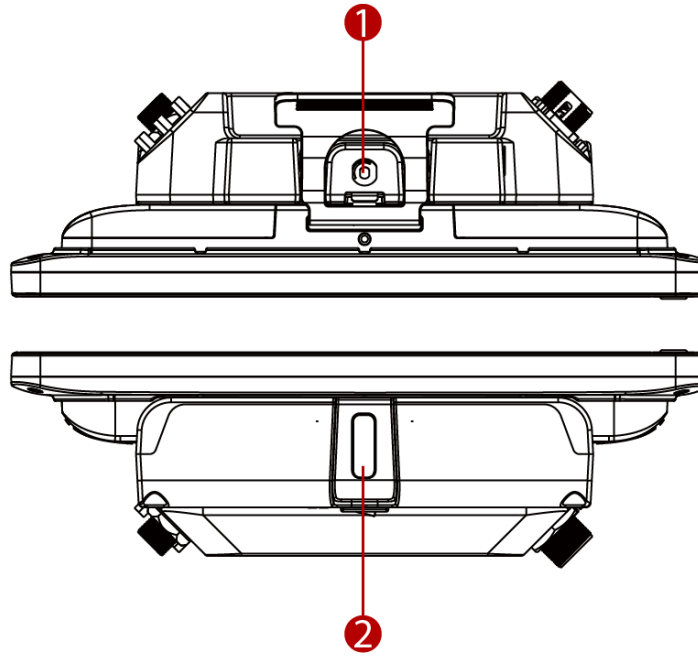
Right Side



No	Item	Description
1	WLAN Antenna Connector	Connect a WLAN external antenna and allow the device to be remotely mounted on the vehicle
2	GPS Antenna Connector	Connect a GPS external antenna and allow the device to be remotely mounted on the vehicle.
3	WWAN Antenna Connector	Connect a WWAN external antenna and allow the device to be remotely mounted on the vehicle
4	Wide Range Power Input	Connect a 10-60V DC IN wide range power input
5	SD Card / SIM Card Slot	Service window to insert SIM or MicroSD card.
6	USB Type-C	A high-speed USB port connects to USB devices
7	Power Input	Connect a 12V DC IN power input
8	COM1 and COM2	Connect a peripheral device such as a printer or scanner with serial port
9	USB Type-A x 2	Connect USB peripheral devices such as USB Flash drive, mouse, keyboard, printer, etc.
10	CAN Bus / Audio	Connect to a vehicle, allowing access to wide range of vehicle data/ Connects headphone or other audio output devices.
11	LAN Port	Connect to a local area network (LAN) using an Ethernet cable and provide optional POE with 48V.

*With service window cover.

2.4 Top and Bottom View

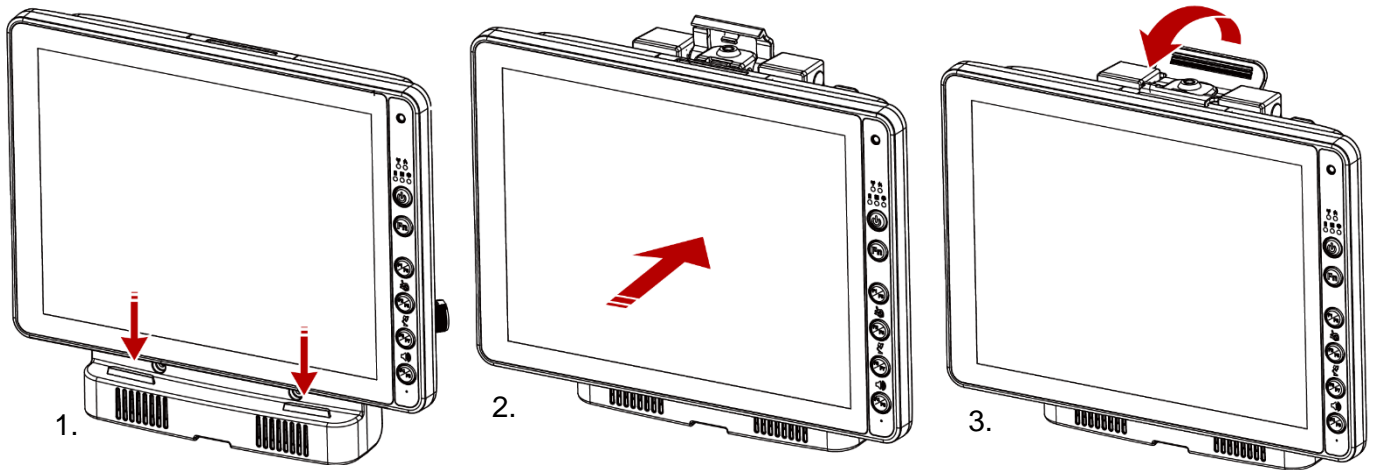


No	Item	Description
1	Lock	Lock the tablet in place
2	Reading Light	Use to provide illumination in dark environment

3. Docking and Undocking the Device

Perform the following to dock the device:

1. Align the golden connector and guide pin holes on the device with the golden connector and guide pins on the docking station
2. Insert the device into the guide pin holes on the docking station
3. Slightly push the upper part of the device towards the docking station until you hear the “click” sound, including the device is fixed on the docking station.



NOTE

Condition

If the battery is full and power is connected to the dock.

If the battery is low and power is connected to the dock.

Result

The battery indicator is off.

The battery indicator is orange.

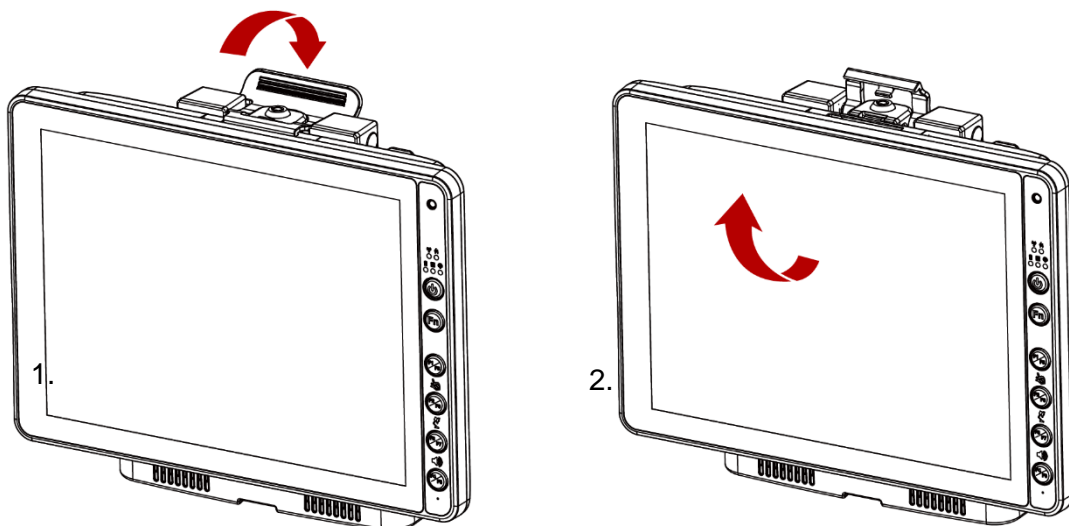


CAUTION/ ATTENTION

Always place the FM12E on the dock from top side. Placing from left or right sides may damage the docking connector.

Perform the following to undock the device:

1. While holding the device, push the release latch on the docking station and then lift the device to undock it.



4. Power Cable Installation

4.1 Wiring the Power Cable



WARNING! / AVERTISSEMENT!

This procedure requires a trained service personnel only, improper installation can cause serious damage to the vehicle or the device.

Cette procédure nécessite un personnel de maintenance qualifié uniquement, une mauvaise installation peut causer des dommages importants au véhicule ou le dispositif.

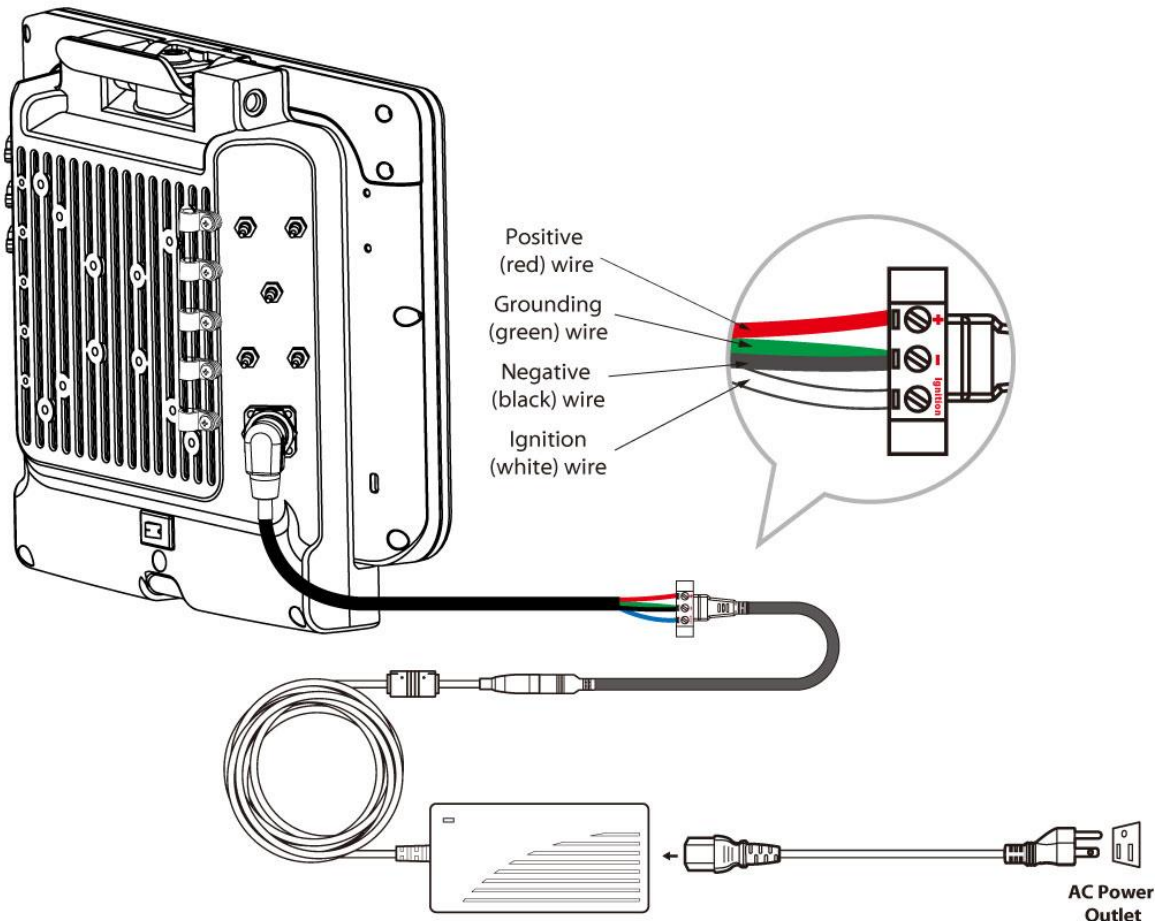
4.2 Connecting the Power Cable for Testing



IMPORTANT:

It is highly recommended to purchase the power cable for testing purpose.

Wiring Instruction



1. Place the device on the vehicle dock and make sure the device is Off.
2. Connect the CN2 to the FM12E vehicle dock by aligning the connector pins and then push it, twist to fasten the connection.
3. Connect the AC plug to the electrical outlet.
4. Switch the power switch On, located on the back of the vehicle dock.
5. Press the On button, the device is ready for testing.

4.3 Connecting the power cable for installation on the vehicle



WARNING! / AVERTISSEMENT!

This power cable should only be used on the 24, 36, or 48 Volt forklifts. Note that, this power cable cannot work for 12 Volt forklifts.

Ce câble d'alimentation ne doit être utilisé sur les 24, 36, ou 48 chariots élévateurs Volt. Notez que, ce câble d'alimentation ne peut pas travailler pour 12 chariots élévateurs Volt.



WARNING! / AVERTISSEMENT!

Select a mounting location and make sure it is not located on the outside the vehicle.

Sélectionnez un emplacement de montage et assurez-vous qu'il ne se trouve pas à l'extérieur du véhicule.

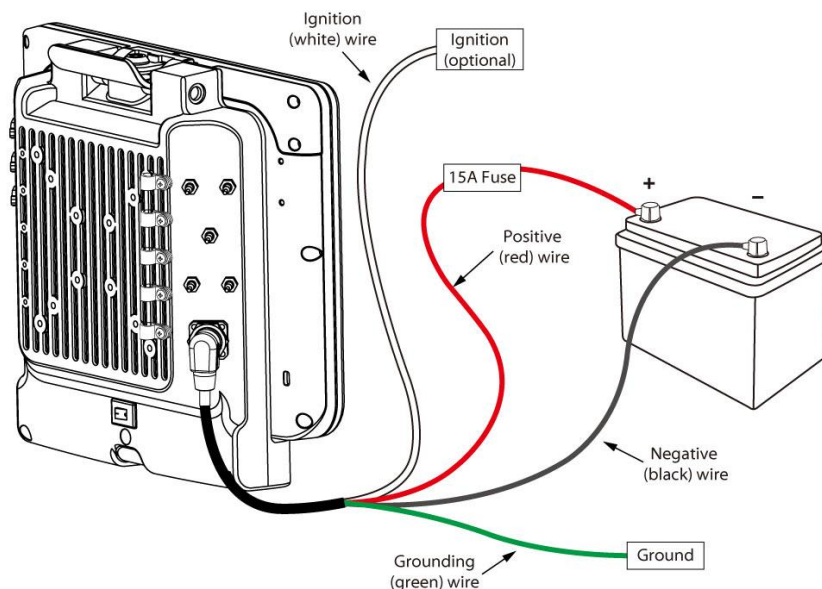


WARNING! / AVERTISSEMENT!

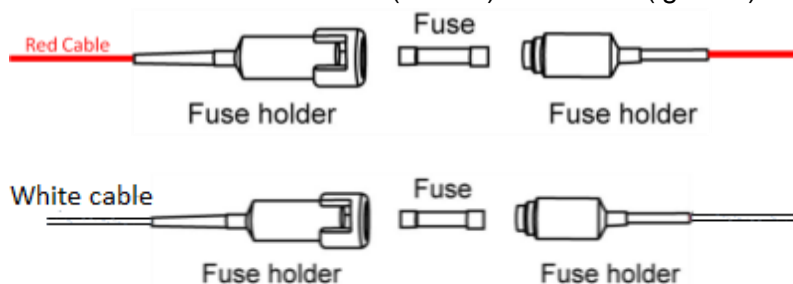
Do not perform the installation on a moving or live electric forklift.

Ne pas effectuer l'installation sur un mobile ou un chariot élévateur électrique sous tension.

Wiring Instruction



1. Remove the vehicle battery before connecting the power cable
2. Connect the **Green** Wire (Ground) to the vehicle's chassis (grounding), which can also be negative pole of the battery
3. Place the fuse and fuse holder in-line of the **Red** (VCC +) and White (ignition) wires as shown below.



Fuse Specification:

Two Fuses, 15A, 250Volt, UDA Type Fuses



WARNING! AVERTISSEMENT!

All power wiring must use the supplied power cable.

Tout le câblage électrique doit utiliser le câble d'alimentation fourni.

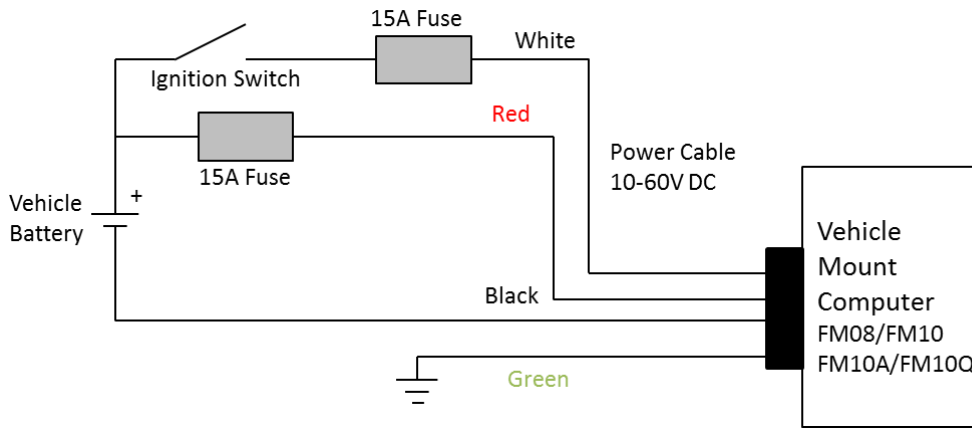
4. Slide tubing over wires, remove the wires and insert it to the fuse holder, crimp it.
5. Connect the red wire to the vehicle's positive power source. Connect the black wire to the vehicle's negative power source.
6. Connect the white wire to the vehicle's ignition switch for the ignition function, if the requirement is connected to vehicle without ignition, please connect ignition pin to battery V+.

Warning! When power is on, ignition pin connects to battery V+ will cause the power consumption even ignition is off

Power cable description:

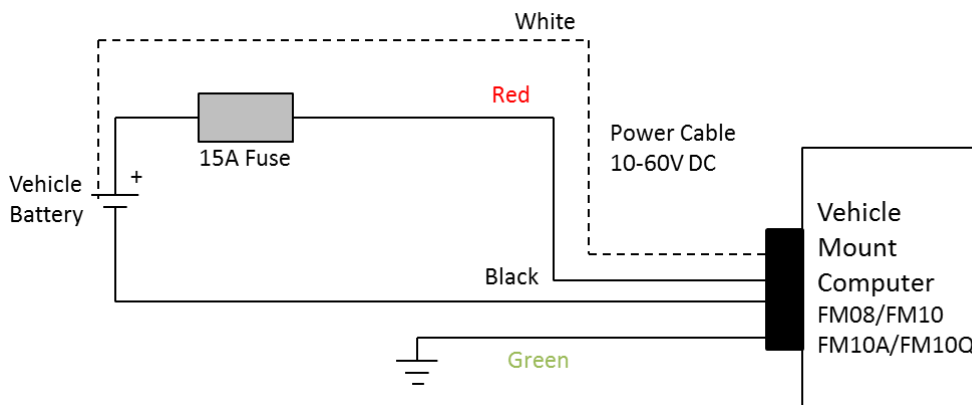
Color	Symbol
Red	VCC+
Black	VCC-
Green	Ground
White	Ignition input (optional)

With Ignition Function



7. The ignition cable (White cable) must be connected to the battery positive if the customer does not want to have ignition function, as following.

Without Ignition Function



8. Secure the power cable to the device using cable clamps and place the device in the dock. See *Power cable routing*.



WARNING! / AVERTISSEMENT!


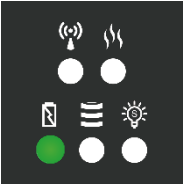



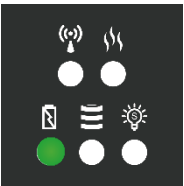

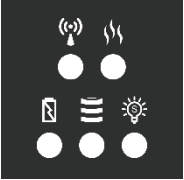
Use the proper cable clamps and do not over tighten it to prevent it from break.
 Utilisez les pinces appropriées du câble et ne serrez pas pour l'empêcher de pause.

9. Press the power switch on the back of the dock See *Power switch*.
10. Press the power button on the front of the device See *Power Button*.

5. Power Management Mode


The FM12E has four power modes:

- Full ON
- Standby / Sleep
- Hibernate
- OFF

Action	Button		Power Button Backlight	Indicator
Turn On		Press the On button for “2 seconds” until the battery indicator On (solid green) and then release the button	Off	
Standby or Sleep Mode *		Press the On button for “2 seconds” until the screen On and then release the button. The battery indicator will Off after the screen is Off, the system is already in the standby / sleep mode	On	
Wake up		Press the On button for “2 second” until the screen On and then release the button. The battery indicator will On (solid green)	Off	
Turn Off		Press the On button for “4 second” until the system is turns Off and then releases the button.	Off	

6. Defroster

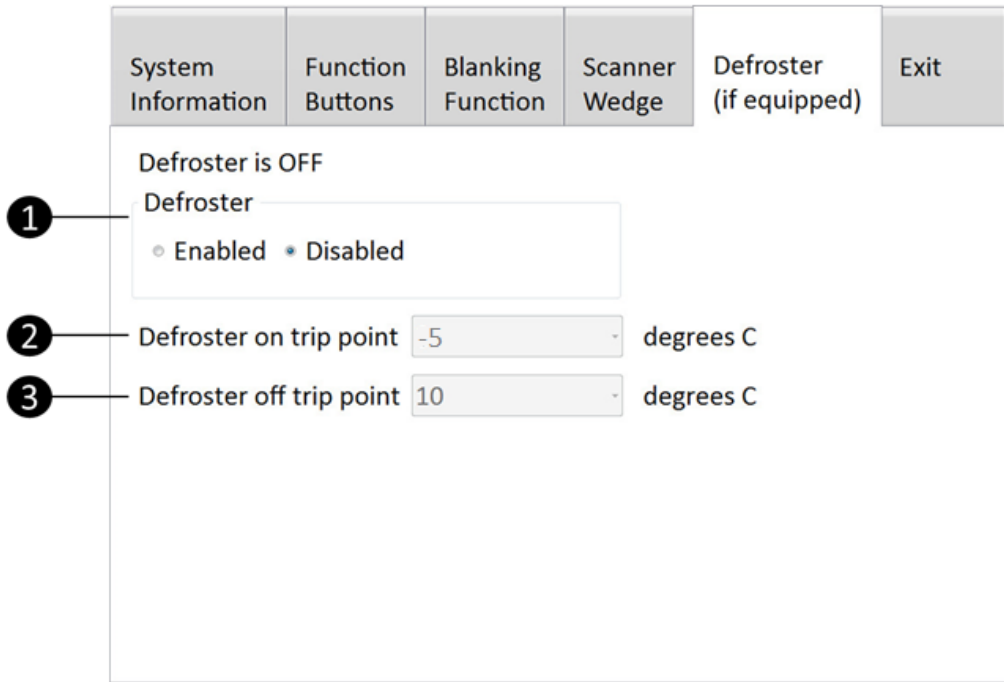
In cold storage, outdoor or in intermodal facilities condensation may appear on the screen. A defroster clears condensation and thaw frost from the screen. Notice that Defroster is an optional feature for the FM12E and may not be present in your device.

To show the defroster status open Win-Set  and go to the Defroster sub-menu to see the information about the defroster.




IMPORTANT:

The defroster is always **disabled** when the device is operating from UPS battery power.



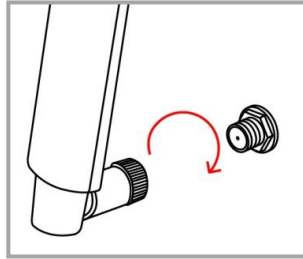
Item	Setting	Setting Options	Default Setting	Description
1	Defroster	Enabled	Disabled	Enables the defroster.
		Disabled		Disables the defroster.
2	Defroster on trip point	-30 ~ 0°C	Default: -5°C	When enabled, defroster automatically starts working when the outside temperature drops down to defroster on trip point (°C)
3	Defroster off trip point	+5°C, +10°C	Default: +10°C	When enabled, defroster automatically stop working when the outside temp. reaches defroster off trip point (°C)

Press Exit  button to close the Win-Set menu and go back to the desktop.

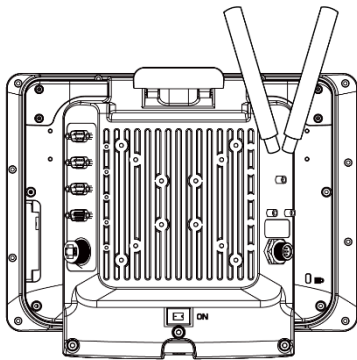
7. External / Vehicle Remote Antenna

The FM12E vehicle dock is equipped with SMA Connector for additional external antenna (WLAN or optional WWAN), to install the antenna please perform the following:

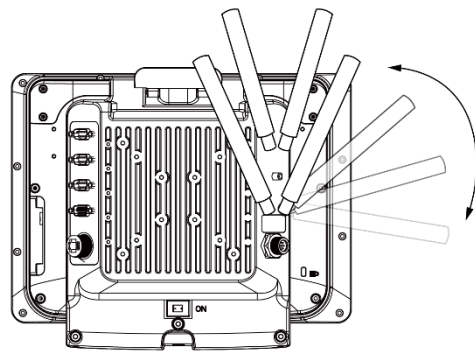
1. Remove the rubber cap on the SMA connector before installing the antenna.
2. Align the antenna with the SMA connector and fasten it as following picture.



3. Adjust the position of external antennas.

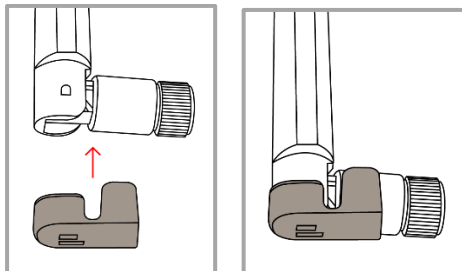


WLAN Antenna Installation



WLAN and WWAN Antenna Installation

4. Attach plastic fixing bracket to fix the position of each antenna.



8. RAM Mount Installation

Winmate recommends using RAM Mounting Parts as part of our device mounting solution. The rear cover of this device is designed to be mounted to RAM Mount solutions, which provides different mounting options to fit any industrial use or vehicle. Please notice that mounting kits are not included in the standard package.

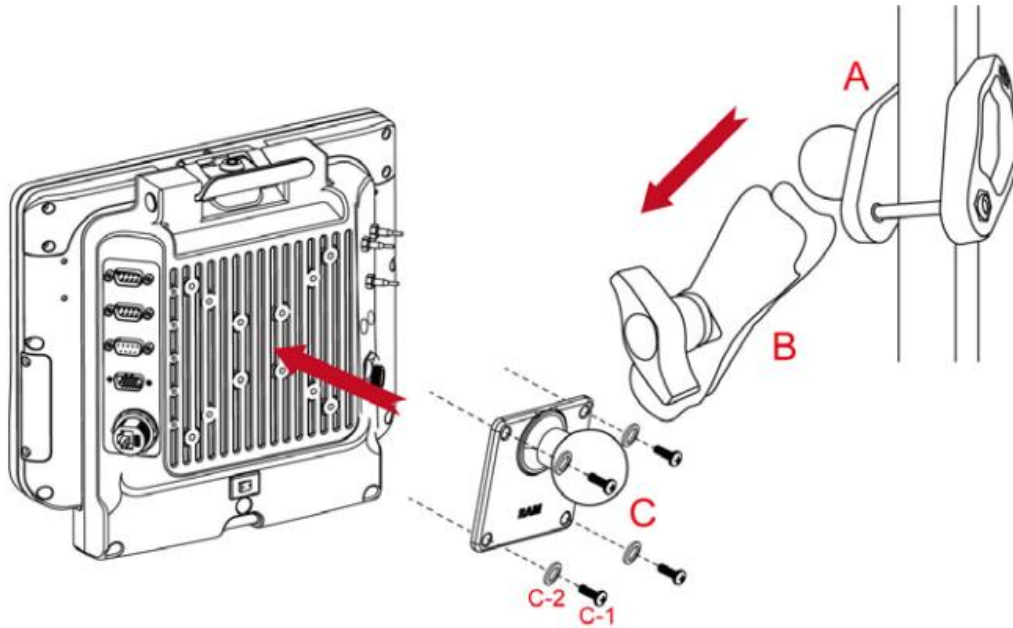
RAM Base Dimensions: 38.1 x 30 mm

Screw: 4 x M5-0.8x10 mm Phillips screws



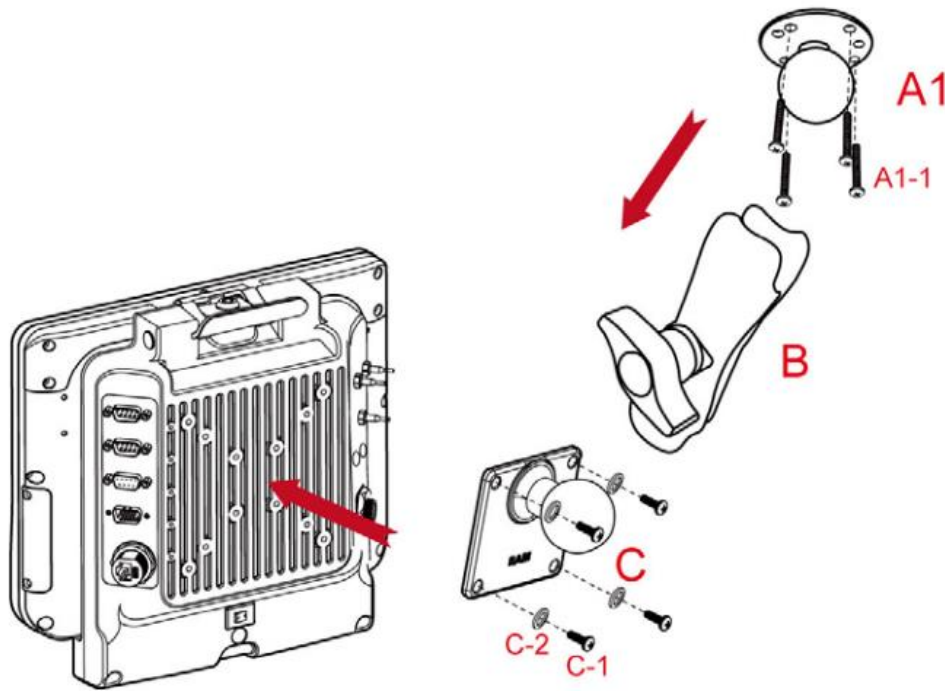
Important:

The information below is just a guideline on how you should mount the Winmate device using RAM Mount. To purchase the RAM parts, please follow the RAM Mounts Part and purchase from your preferred retailer.

Mounting 1 – No Drill Solution

No	Component	RAM Mount Part Number	Description	QTY
A	RAM Clamp Mounts - on the forklift	RAM-D-247U-4	Clamp base with 2.25" Ball	1
B	RAM Arm	RAM-D-201U	Arm for 2.25" Ball(L:8.375")	1
C	RAM Ball on the device side	RAM-D-2461U	75x75mm VESA with 2.25" Ball	1
C-1	Screw	-	SUS304 M5 x 12mm Screw	5
C-2	Washer	-	M5 Washer	5

Mounting 2 – Drill Solution



No	Component	RAM Mount Part Number	Description	QTY
A1	RAM round base mounts - on the forklift	RAM-D-202U	3.68" Round Base with 2.25" Ball	1
A1-1	Screw	-	SUS304 M8 x 40mm Screw	5
B	RAM Arm	RAM-D-201U	Arm for 2.25" Ball (Length:8.375")	1
C	RAM Ball on the device side	RAM-D-2461U	75x75mm VESA with 2.25" Ball	1
C-1	Screw	-	SUS304 M5 x 12mm Screw	5
C-2	Washer	-	M5 Washer	5

RAM Mount Assembly

Step 1 Install RAM Clamp to vehicle or forklift

1. Determine the position for mounting the RAM clamp mount according to RAM Mounts installation guide and specification.
2. Place the upper clamp with ball on the beam, insert the bolt.
3. Place the lower clamp below the beam. Align the bolts with the holes in the lower clamp.
4. Place the nuts and then tighten it.

Step 2 Install RAM Ball base to vehicle dashboard / other surface.

1. Please make sure that the surface is flat and rigid.
2. Attach the RAM ball base to the vehicle and fix it using bolt or fasteners.

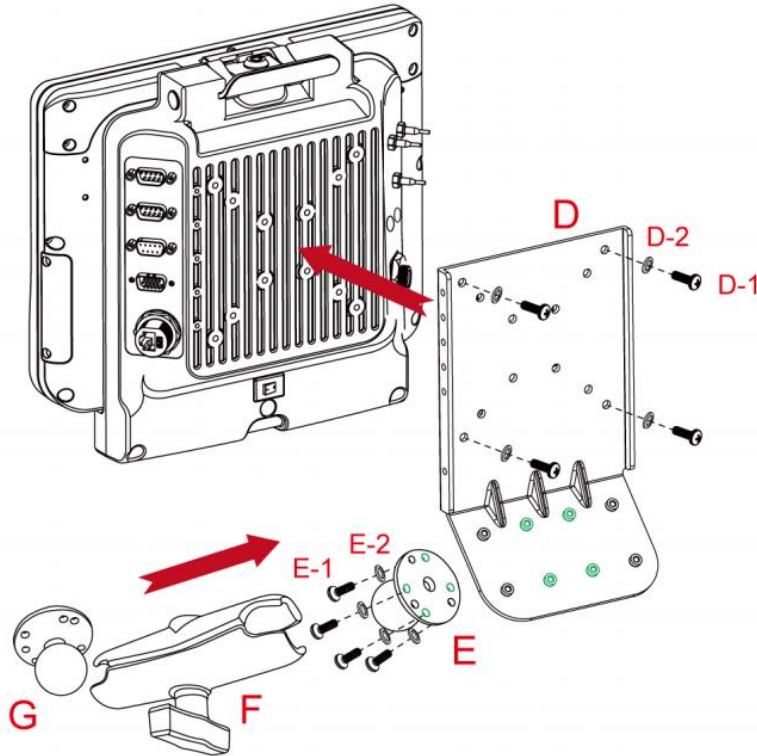
Step 3 Attach RAM Mount Ball to the device docking.

1. Turn the device off before installing the RAM mount ball.
2. Locate the VESA mount holes on the back of the device and align it with the holes from RAM Ball base. Fix with four M5 screws.

Step 4 Attach the device to RAM arm.

1. Insert the RAM arm over the ball on the vehicle RAM mount (shown here).
2. Insert the ball on the dock into the RAM arm and tighten the knob.

Mounting 3 – Keyboard Mounting Installation

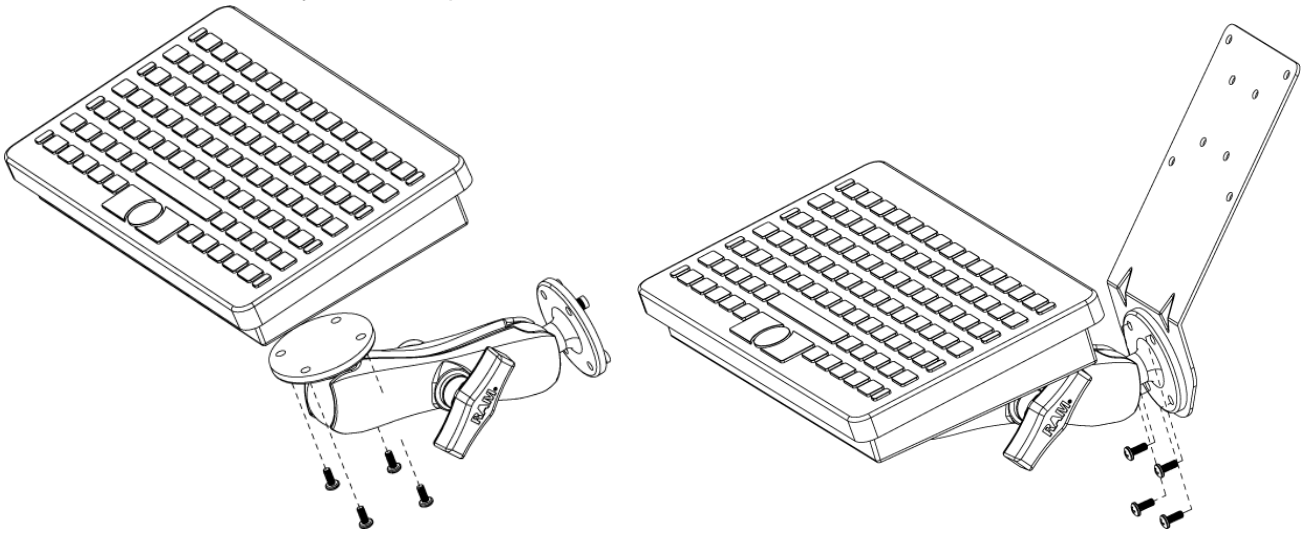


No	Component	RAM Mount Part Number	Description	QTY
D	Wimate Keyboard Adapter Plate (designed by Wimate)	-	4 VESA Holes on the plate to device and 4 AMPS holes to RAM Ball	1
D-1	Screw	-	SUS304 M5 x 20mm Screw	5
D-2	Washer	-	M5 WASHER	5
E	RAM Ball on the sloped part of the keyboard adapter plate	RAM-202U	2.5" Round Base with 1.5" Ball	1
E-1	Screw	-	SUS304 M4 x 14mm Screw	5
E-2	Washer	-	M4 WASHER	5
F	RAM Arm	RAM-201U	Arm for 1.5" Ball (Length:5.6")	1
G	RAM Ball on the sloped part of the keyboard adapter plate	RAM-202U	2.5" Round Base with 1.5" Ball	1

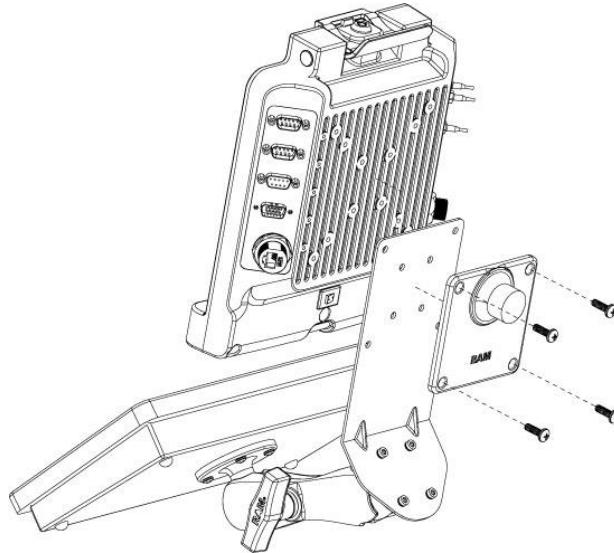
Keyboard Assembly

This part shows the steps to install the keyboard.

1. Fasten all four screws on the RAM mount ball on the back of the keyboard.
2. Fasten the keyboard adapter on the other end of the RAM mount ball.



3. Fasten the RAM mount ball screws on the back of the device, so all mounting parts are fastening together.





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