

Marine Panel PC Flat P-CAP series



Model Name: W15IAD3S-MRC3FP
R15IAD3S-MRA3FP
R19IAD3S-MRM2FP
W24IAD3S-MRA2FP
W27IAD3S-MRA1FP

User Manual



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Preface

FCC Statement



This device complies with part 15 FCC rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "A" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

European Union



Electromagnetic Compatibility Directive (2014/30/EU)

- EN55035:2017/A11:2020
 - IEC61000-4-2:2008
 - IEC61000-4-3:2020
 - IEC61000-4-4:2012
 - IEC61000-4-5:2014/A1:2017
 - IEC61000-4-6:2013+COR1:2015
 - IEC61000-4-8:20009
 - IEC61000-4-11:2020
- EN55032:2015+A11:2020
- EN61000-3-2:2019+A1:2021
- EN61000-3-3:2013+A2:2021

Low Voltage Directive (2014/35/EU)

- EN62368-1:2014+A11:2017

This equipment is in conformity with the requirement of the following EU legislations and harmonized standards. Product also complies with the Council directions.

Copyright Notice

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Trademark Acknowledgement

Brand and product names are trademarks or registered trademarks of their respective owners.

Disclaimer

We reserve the right to make changes, without notice, to any product, including circuits and/or software described or contained in this manual in order to improve design and/or performance. We assume no responsibility or liability for the use of the described product(s) conveys no license or title under any patent, copyright, or mask work rights to these products, and make 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 manual are for illustration purposes only. We make no representation or guarantee that such application will be suitable for the specified use without further testing or modification.

Warranty

Our warranty guarantees that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, we will, at his/her option, repair or replace the defective product at no charge to the customer, provide it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service. If the serial number and the product shipping date differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W16Axxxxxxx means October of year 2016.

Customer Service

We provide a service guide for any problem by the following steps: First, visit the website of our distributor to find the update information about the product. Second, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance.

Advisory Conventions

Four types of advisories are used throughout the user manual to provide helpful information or to alert you to the potential for hardware damage or personal injury. These are Notes, Important, Cautions, and Warnings. The following is an example of each type of advisory.



Note:

A note is used to emphasize helpful information



Important:

An important note indicates information that is important for you to know.



Caution/ Attention

A Caution alert indicates potential damage to hardware and explains how to avoid the potential problem.

Une alerte d'attention indique un dommage possible à l'équipement et explique comment éviter le problème potentiel.



Warning!/ Avertissement!

An Electrical Shock Warning indicates the potential harm from electrical hazards and how to avoid the potential problem.

Un Avertissement de Choc Électrique indique le potentiel de chocs sur des emplacements électriques et comment éviter ces problèmes.

Safety Information



Warning!/ Avertissement!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Toujours débrancher le cordon d'alimentation du chassis lorsque vous travaillez sur celui-ci. Ne pas brancher de connexions lorsque l'alimentation est présente. Des composants électroniques sensibles peuvent être endommagés par des sauts d'alimentation. Seulement du personnel expérimenté devrait ouvrir ces chassis.



Caution/ Attention

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Toujours vérifier votre mise à la terre afin d'éliminer toute charge statique avant de toucher la carte CPU. Les équipements électroniques modernes sont très sensibles aux décharges d'électricité statique. Toujours utiliser un bracelet de mise à la terre comme précaution. Placer toutes les composantes électroniques sur une surface conçue pour dissiper les charges, ou dans un sac anti-statique lorsqu'elles ne sont pas dans le chassis.



RoHS Declaration

According to the European Union issued Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2.0). Winmate Inc.'s guaranty is able to meet the current regulations and customer requirements in respect of the application of cadmium, lead, mercury, hexavalent chromium, PBBs, PBDEs in its product.

Chapter 1: General Information

1.1 Introduction

The Flat P-CAP Marine Panel PC is high performance Panel PC with CPU Intel i5-1335U 4.6GHz. Design with transfective panel, dimming brightness, capacitive touch key front panel, projective capacitive multi-touch screen, IP65 proof, wide voltage range power input acceptable, and anti-corrosion protection. Born to the demands of marine applications as navigation, ship automation, and surveillance, rugged industrial and light military applications.

The Flat P-CAP Marine Panel PC With RS-232/422/485 and NMEA 0183 series port, 2 x Gigabit Ethernet LAN ports, high quality HDMI output, 8 x channel Digital In/Out with 1.5KV isolation(optional).

All Flat P-CAP Marine Panel PC product designs follow IEC-60945, DNV2.4, IACS E10 Maritime Navigation Certification and Radio-communication Equipment and Systems requirements.

1.2 Features

- 15" ~ 27" Screen with P-Cap Touch
- Fanless Cooling System
- Intel® Core™ i51335U
- RAM DDR5 8GB up to 32GB
- SSD NvMe 128GB up to 2TB
- Optional I/O Ports: 4 x NMEA 0183, 8 x DIDO

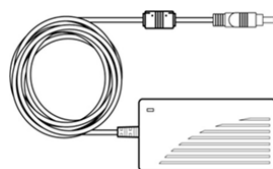
1.3 Package Contents

Carefully remove the box and unpack your device. Please check if all the items listed below are inside your package. If any of these items are missing or damaged contact us immediately.

Standard factory shipment list:



- **Quick Start Guide (Hardcopy)**



- **Adapter with 3-Pin Terminal Block (Not For Marine Use)**



- **Power Cord (Not For Marine Use) Varies by Country**



- **M4 x 30 Screws**

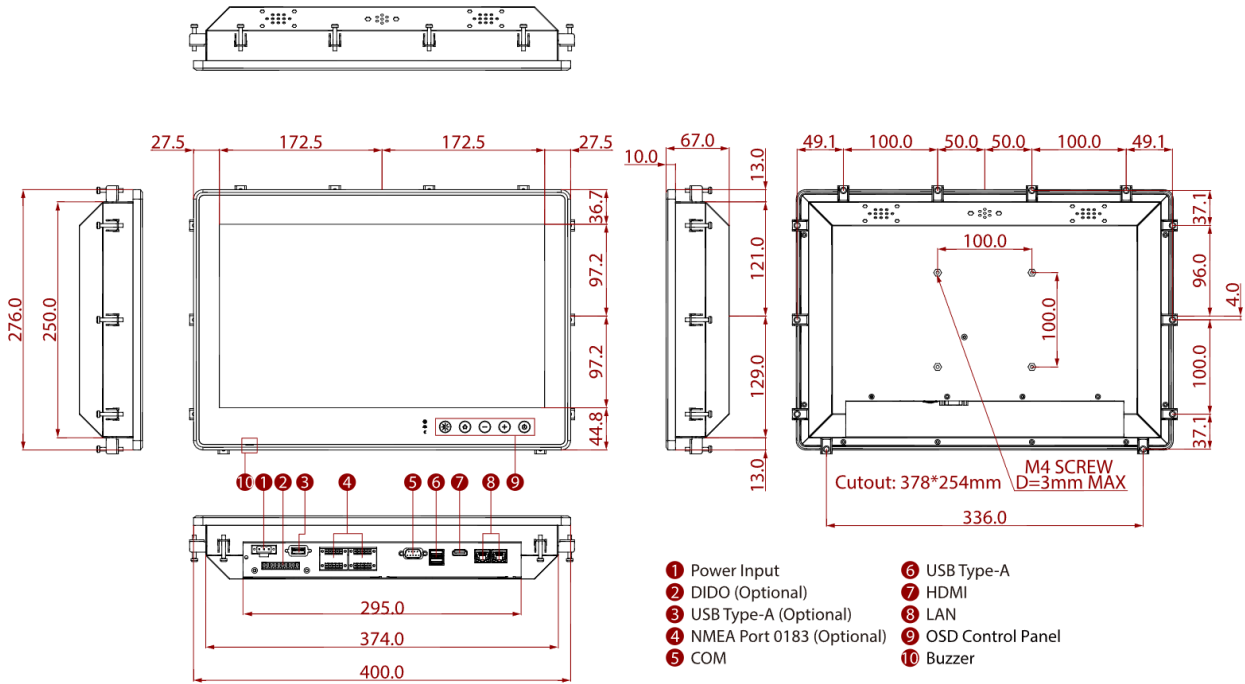


- **M4 x 15 Screws**

1.4 Product Dimensions

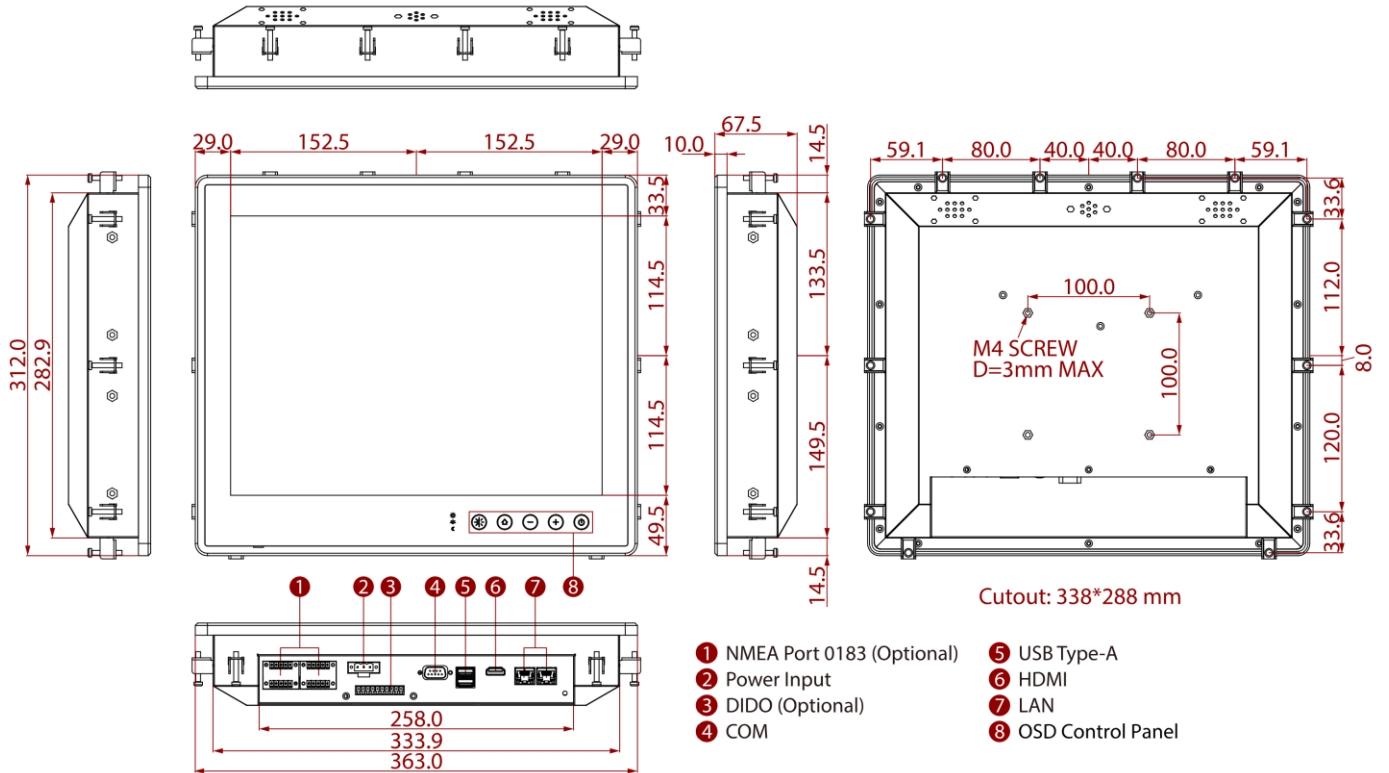
W15IAD3S-MRC3FP

Unit: mm



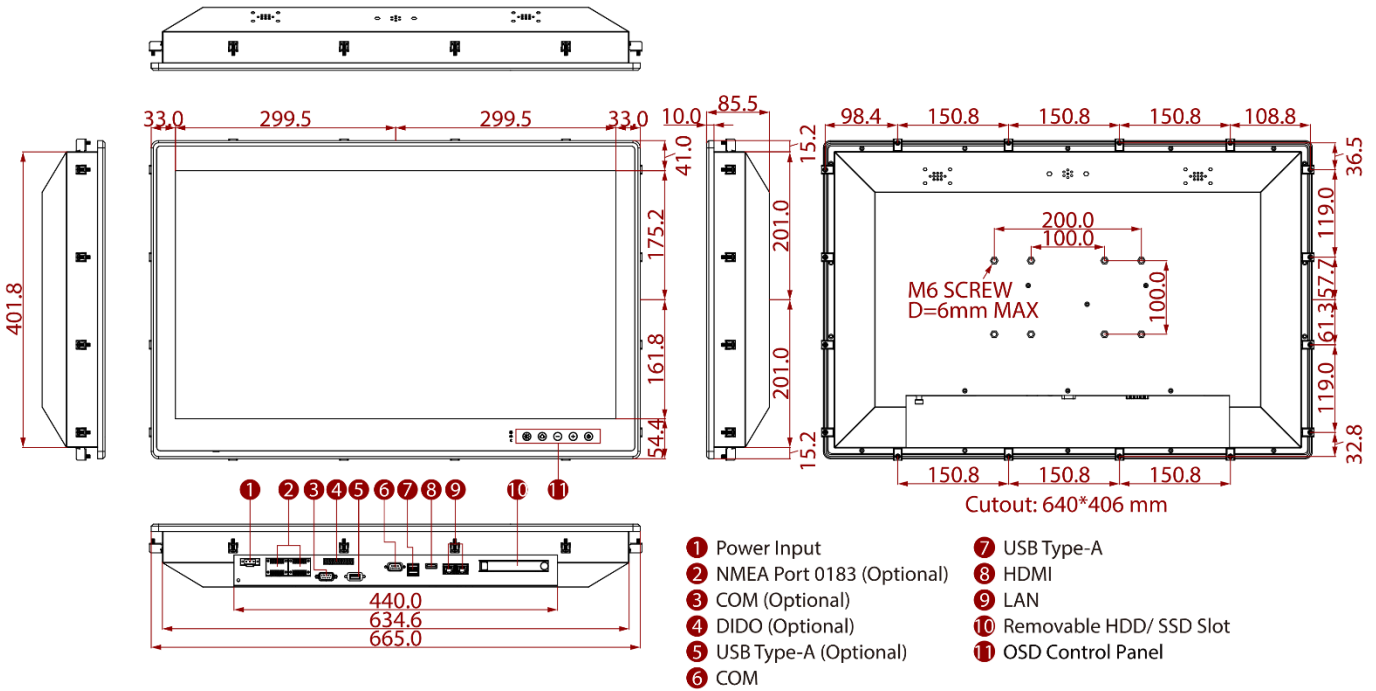
R15IAD3S-MRA3FP

Unit: mm



W27IAD3S-MRA1FP

Unit: mm



Notes:

1. Appearance just for reference only, outward dimension will different by product size.
2. Bottom I/O just for reference only, I/O will different by product size.






Chapter 2: Hardware Introduction

2.1 Capacitor Touch Keys Introduction

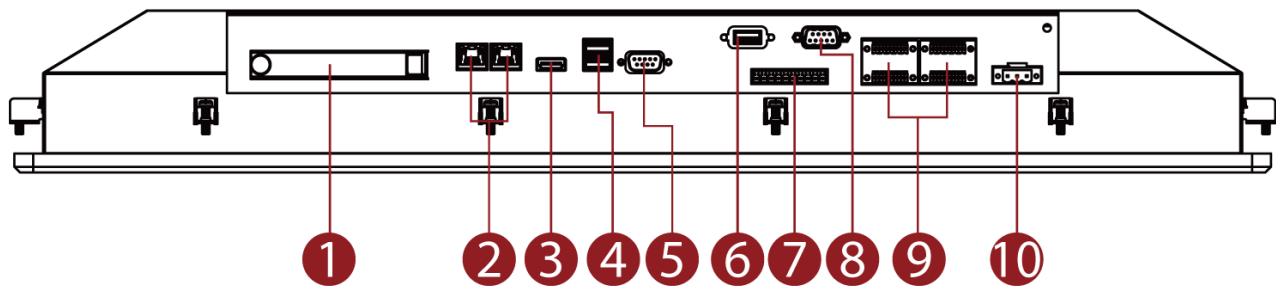
The Marine Panel PC comes with five display control keys in the lower blue right corner of the screen, it's for quick access to hardware and display OSD control.



5 x Capacitive Touch

Touch Keys	Function	Description
	Power	Power on/off control
	Brightness/Volume	To increase brightness of panel /To increase Volume
	Brightness/Volume	To decrease brightness of panel /To decrease Volume
	Menu	Switch to Metro or Desktop
	ECDIS Mode	Switching ECDIS standard range mode (Day / Dust / Night mode)

2.2 Input / Output Signals Overview



No.	Description	No.	Description
1	Removable HDD/ SSD Slot	6	USB Type-A (Optional)
2	LAN	7	DIDO (Optional)
3	HDMI	8	COM (Optional)
4	USB Type-A	9	NMEA Port 0183 (Optional)
5	COM	10	Power Input

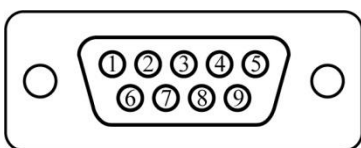
2.3 Connecting Peripherals

This section lists HMI connectors and pin assignment.

2.3.1 Serial Port Connector

Use COM1 serial port connector to connect your HMI to external devices such as mouse, modem or printer. You can configure serial port settings via jumpers located on the motherboard.

Pin assignment and signal names of serial port connector

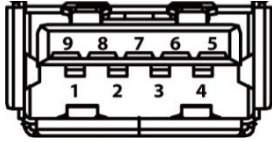


Pin №	RS232	RS422	RS485
1	DCD	TxD-	D-
2	RXD	TxD+	D+
3	TXD	RxD+	NC
4	DTR	RxD-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

2.3.2 USB Connector

The HMI has two USB 3.2 connectors. Use USB connector to connect your device to other USB compatible devices such as mouse, keyboard and printer.

Pin assignment and signal names of USB 3.2 connectors

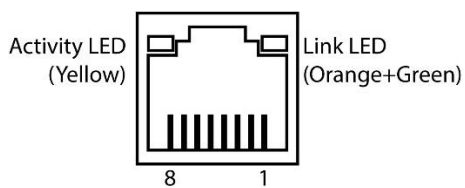


Pin №	Signal Name	Pin №	Signal Name
1	+5V	2	USB_D-
3	USB_D+	4	GND
5	STDA_SSRX-	6	STDA_SSRX+
7	GND_DRAIN	8	STDA_SSTX-
9	STDA_SSTX+		

2.3.3 Ethernet Connector

The HMI has two RJ45 connectors that support 10/100/1000 Mbps Ethernet interface for connecting to the internet. Notice that only one RJ45 connector supports PoE function.

Pin assignment and signal names of Ethernet connector

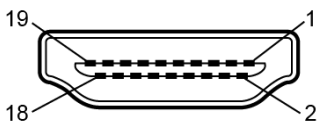


Pin №	Signal Name	Pin №	Signal Name
1	TX1+	2	TX1-
3	TX2+	4	TX2-
5	TX3+	6	TX3-
7	TX4+	8	TX4-

2.3.4 HDMI Connector

The HMI has one HDMI1.4a connector.

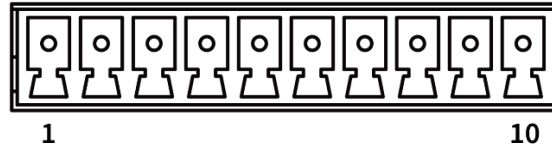
Pin assignment and signal name of HDMI connector



Pin №	Signal Name	Pin №	Signal Name
1	HDMI_DET	2	NC
3	HDMI_D2P	4	GND
5	HDMI_D2M	6	HDMI_D1P
7	GND	8	HDMI_D1M
9	HDMI_D0P	10	GND
11	HDMI_D0M	12	HDMI_CLKP
13	GND	14	HDMI_CLKM
15	HDMI_CEC_OUT	16	GND
17	DDC_CLOCK	18	DDC_DATA

2.3.5 Digital Input/ Output

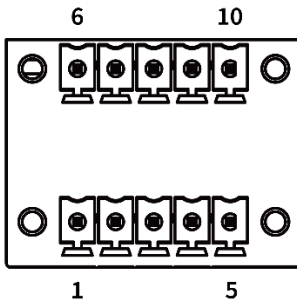
4-channel Isolated Digital Input and Output, On-board optical isolation protection output up to 1.5KVdc



Pin №	Symbol	Description
1	DO_COM	DO Port Reference Voltage Level
2	DO_0	Digital Output 0
3	DO_1	Digital Output 1
4	DO_2	Digital Output 2
5	DO_3	Digital Output 3
6	ISOGND	Isolated Ground
7	DI0	Digital Input 0
8	DI1	Digital Input 1
9	DI2	Digital Input 2
10	DI3	Digital Input 3

2.3.6 NMEA 0183 Port

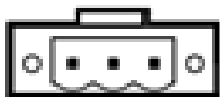
NMEA 0183 serial interface provide convenient means of connecting maritime or navigation device.



Pin №	Signal Name	Pin №	Signal Name
1	TxD1-	6	TxD2-
2	TxD1+	7	TxD2+
3	GND	8	GND
4	RxD1-	9	RxD2-
5	RxD1+	10	RxD2+

2.3.7 DC Input*

DC terminal block power source input compact design meets the maritime application. The 3pin terminal block is to be secured that the cable to screw terminal.



Pin №	Signal Name	Description
1	VIN+	9-36V DC Input+
2	VIN-	9-36V DC Input-
3	GND	Ground

*Note:

Approval by DNV Certificate: 24V DC In
Acceptable Input Range: 9~36V DC Input

2.4 Installing 2.5" Removable HDD

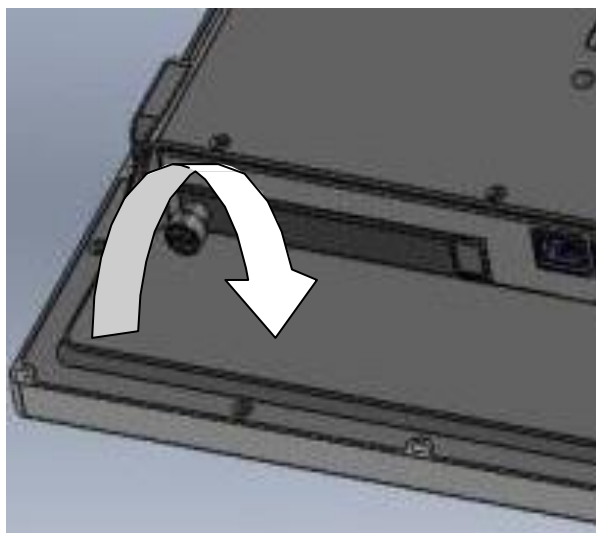
No tools required to upgrade it or replacing the hard disk, do the following to perform this task.

Step1

Disconnect the device from the power source.

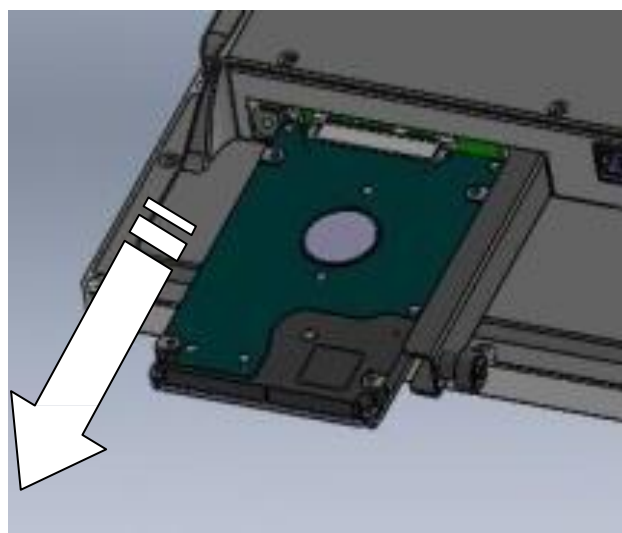
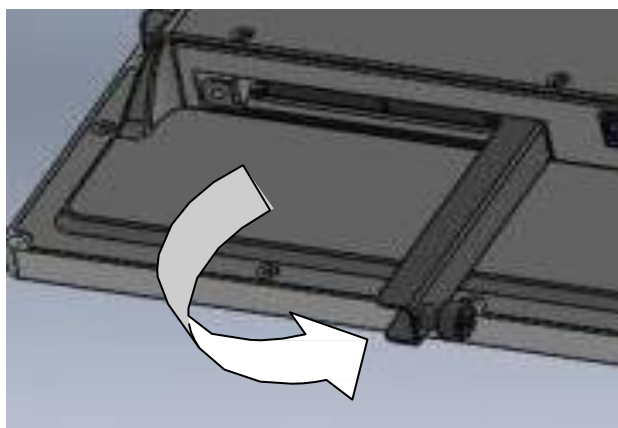
Step2

Loosen the thumb screw beside the valve of Hard Drive Bay.



Step3

Open the valve and take out the bracket with hard disk.



Step4

Replace the hard disk as you wish, be sure to check the orientation of the hard disk correctly

Step5

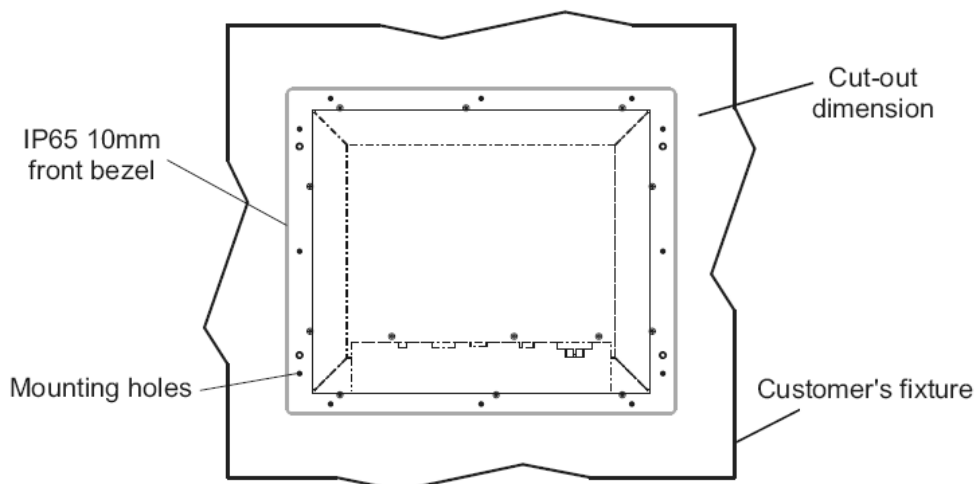
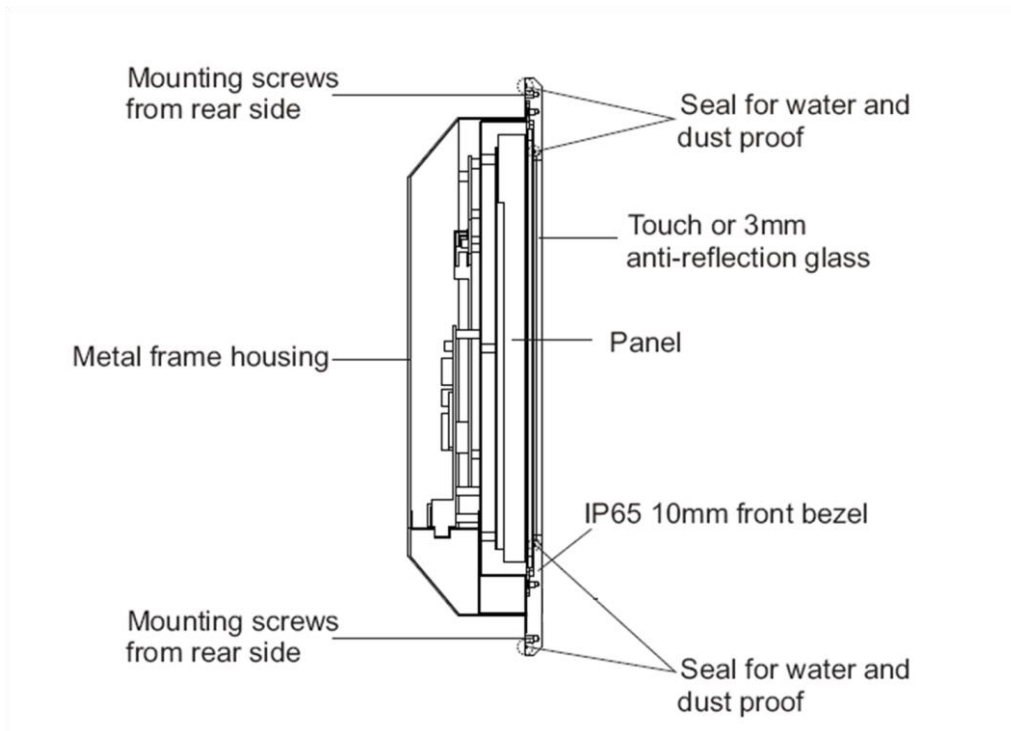
Insert the bracket back and carefully tighten the thumb screw.

Chapter 3: Installation

3.1 General installation

The Marine Panel PC can be applied for several different installation methods, including panel (flush) mounting, bracket mounting, etc. For panel (flush) mounting is normally for a ship's wheelhouse use, it's easy to follow few steps to fix the display product in customer's fixture.

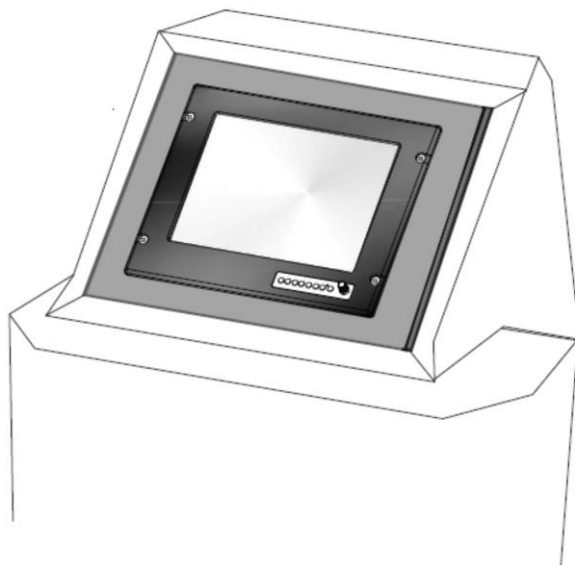
Check the mechanical and mounting concept as below first. The fixture cut-out dimension and mounting holes based on drawing.



3.2 Mounting type

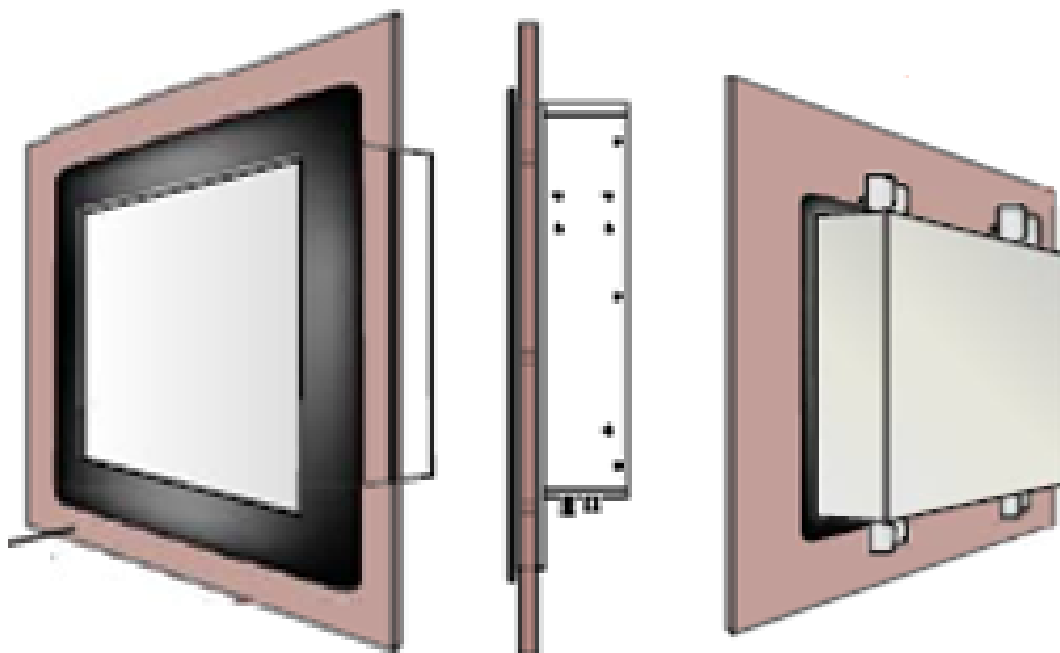
Console Mount

Make sure you console cut out are suiting for product cut out dimension.

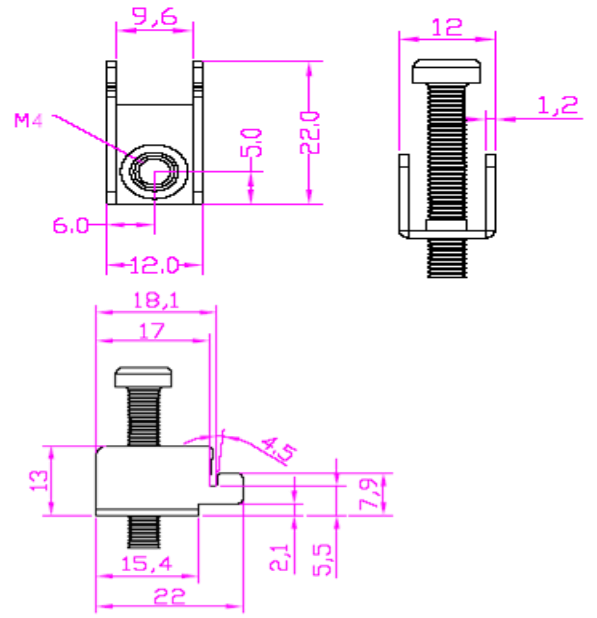
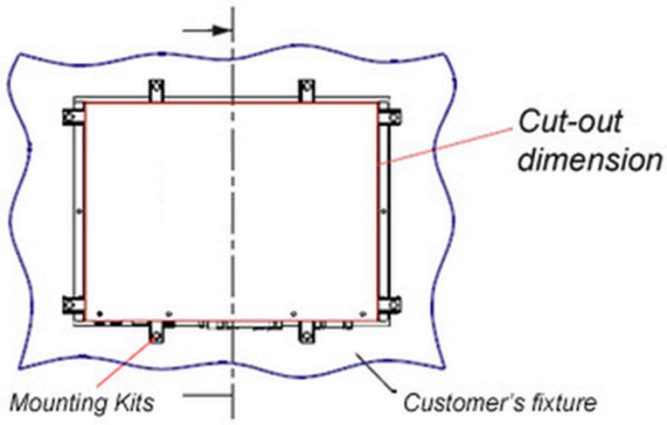


Panel Mount

Use provided mounting kits to fix the Panel PC and the customer's fixture



Custom Fixture



3.3 Installing Note

The following common safety precautions should be observed before installing any electronic device:

- Strive to use separate, non-intersecting paths to route power and networking wires. If power wiring and device wiring paths must cross make sure the wires are perpendicular at the intersection point.
- Keep the wires separated according to interface. The rule of thumb is that wiring that shares similar electrical characteristics may be bundled together.
- Do not bundle input wiring with output wiring. Keep them separate.

When necessary, it is strongly advised that you label wiring to all devices in the system.

! ! ATTENTION ! !



Chapter 4: Operation Introduction

4.1 Turning on/off the Device

To turn on



Press and hold the capacitive power key for **4** seconds until the blue LED backlight lid up.

To turn off

Perform the following procedure to shut down the Panel PC (for Windows 8):

1. Make sure you have closed any programs that are open on the Desktop. Start Screen apps don't need to be closed.
2. Open the Charms Bar by swiping your finger from the far right of the screen towards the middle of the screen.
3. Tab on the **Settings** charm.
4. Tab on **Power**.
5. Tab on **Shut Down**.
6. Wait for Panel PC to power off.

Perform the following procedure to shut down the Panel PC (for Windows 7):

1. Make sure you have closed any programs that are open on the Desktop.
2. Click the **Start** button , and then, in the lower-right corner of the Start menu, click **Shut down**.
3. Or click the arrow next to the **Shut down** button  for more options.

Note:

- The computer will forcibly be turned off if the capacitive power key is pressed and held for **8** seconds or longer.
- If the capacitive power key is pressed and held between 5 to 8 seconds, the computer will enter preset custom power button action in OS. (ex: Do nothing, Ask me what to do, Standby or Shut down)

4.2 Hot Tab Introduction

Installing Touch Key HotTab Control Utility

In the Winmate Download Center, find the installation file “CapacitiveTouchKeys.rar” and execute to start the installation. Follow the on-screen prompt with the installation wizard to finish the installation.

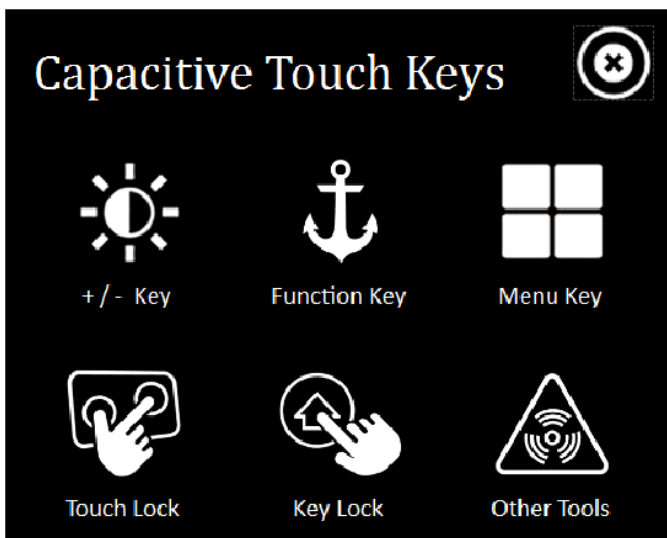
Note:

- If the Panel PC is ordered with OS pre-installed, the HotTab Control Utility would have been installed already.
- **HotTab Utility Icon shown in Windows System Tray:**



Hot Tab main menu

There are 5 main menu options: +/- Key, Function Key, Menu Key, Touch Lock and Key Unlock. Operations and functions on each menu option are explained in detail in the coming section.



Volume Mode

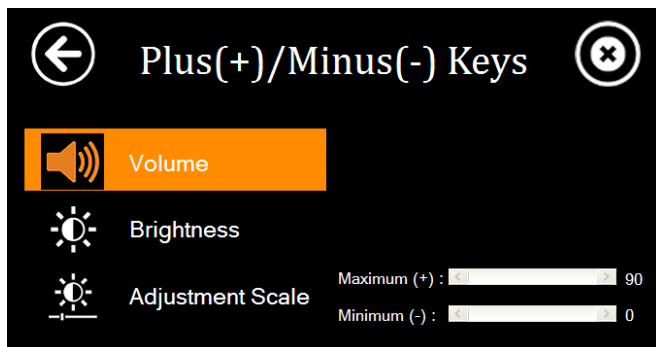
Under this mode, the +/- Key controls **Volume**. (+) touch key is mapped to raise volume and (-) touch key is mapped to lower volume.

To configure the key mapping, perform the following:

1. Open the HotTab utility by double clicking on the HotTab Utility icon in Windows System Tray.
2. Tap on the **+/- Key** option.



3. Tap on **Volume** option.



Brightness Mode

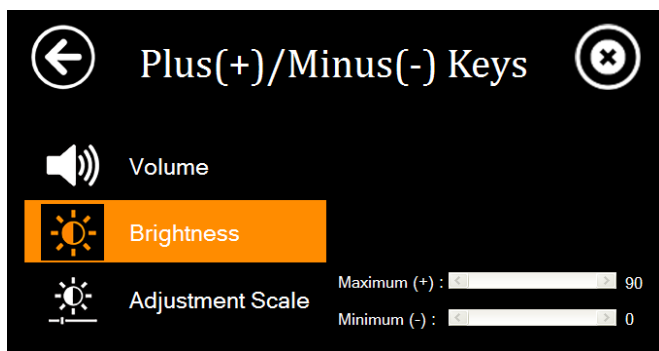
Under this mode, the +/- Keys controls the screen **Brightness**. (+) touch key is mapped to raise screen brightness and (-) touch key is mapped to lower screen brightness.

To configure the key mapping, perform the following:

1. Open the HotTab utility by double clicking on the HotTab Utility icon in Windows System Tray.
2. Tap on the **+/- Key** option.



3. Tap **Brightness** option.



Adjustment Scale Mode

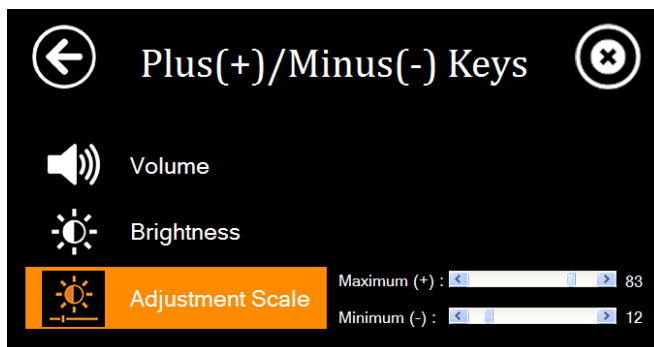
Under this mode, the +/- Keys switches between user's preset Brightness level. (+) touch key sets the screen brightness to user's preset maximum level and (-) touch key sets the screen brightness to user's preset minimum level. In other words, user can switch between two different brightness levels quickly.

To configure the key mapping, perform the following:

1. Open the HotTab utility by double clicking on the HotTab Utility icon in Windows System Tray.
2. Tap on the **+/- Key** option.



3. Tap **Adjustment Scale** option.
4. Drag the Maximum (+) slider or Minimum (-) slider to the right or left to set the desired brightness level.



Setting the Function Key

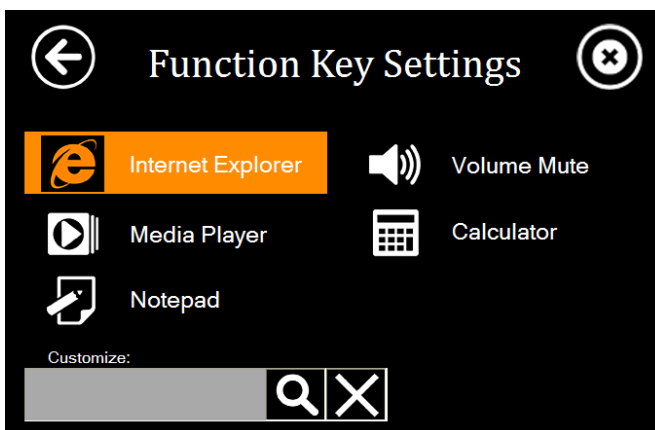
This HotTab Function Key option allows users set the function touch key's function.

To configure function key mapping, perform the following:


1. Open the HotTab utility by double clicking on the HotTab Utility icon in Windows System Tray.
2. Tap on the **Function Key** option.





3. Pick from list of preset applications by tapping on the application icons OR customize which application to execute using the picker.




Using the Custom picker:

1. Tap the  icon to reveal browser window
2. Navigate to the desired executable to map to function key
3. Tap on "Done" to save selection.

To map the function key to another application:

1. Tap on the  icon to remove connection to the original application, and pick again tapping on  icon.


Setting the Menu Key

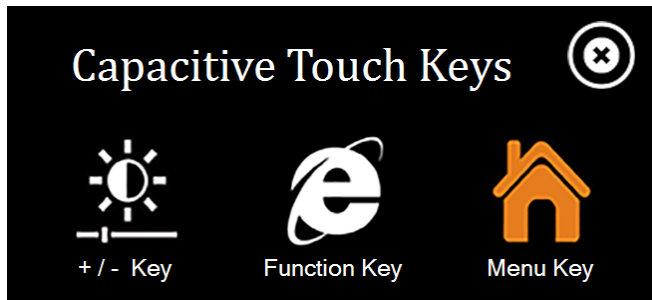
This HotTab Menu Key option allows users set the  touch key's function. There are two options available: Desktop Mode and Metro Mode.


Tapping on the Menu Key option toggles the Menu Key's function between Desktop Mode and Metro Mode (for Windows 8).

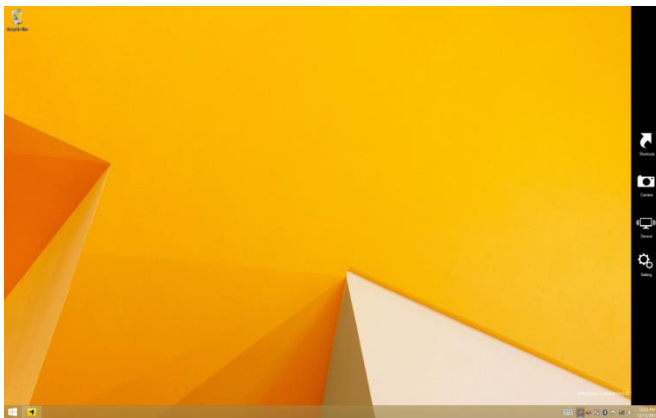
Desktop Mode

1. When the Menu Key is set to the Desktop mode, the Menu Key icon will have the

following icon: .



2. When the user taps the capacitive  key while running an application, the display screen will show the Desktop.



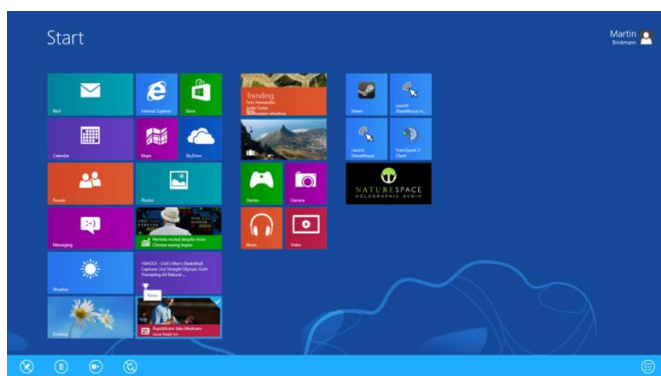
Metro Mode (for Windows)

1. When the Menu Key is set to the Metro Mode, the Menu Key icon will have the following

icon: 



2. When the user taps the capacitive  key while running an application, the display screen will show the Metro UI as shown:

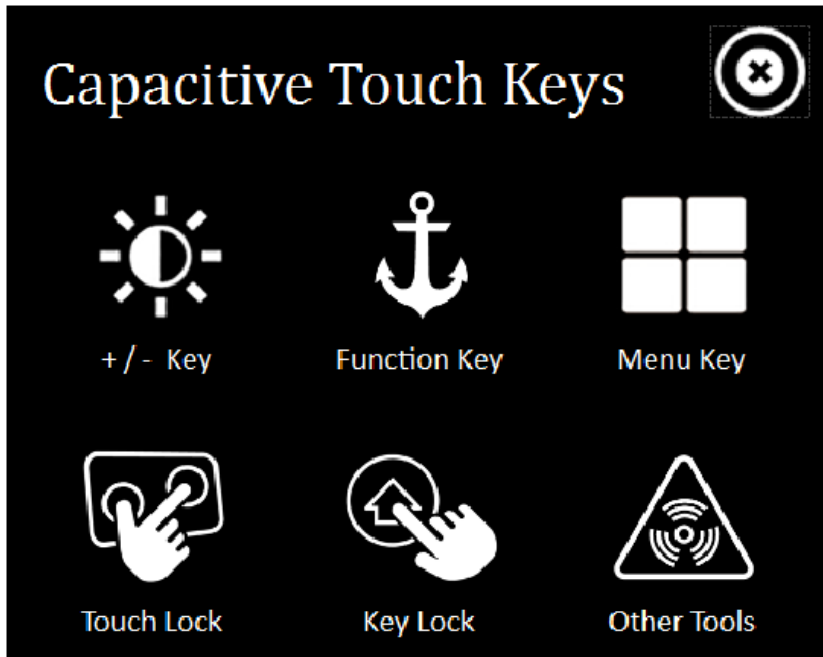


Setting the Touchscreen Lock Key

This HotTab Touch Lock option allows users to set the touchscreen lock function.

To lock the touchscreen, perform the following:

1. Open the HotTab utility by double clicking on the HotTab Utility icon in Windows System Tray.
2. Tap on the **Touch Lock** option then the touchscreen will be locked.



To unlock the touchscreen, perform the following:

1. When the touchscreen is locked, touch the touchscreen, and the display screen will show the touchscreen unlock slide bar.





2. Slide to unlock the touchscreen.
3. If users want to lock the touchscreen again, please follow the **To lock the touchscreen** procedure again.

Setting the Key Lock Key

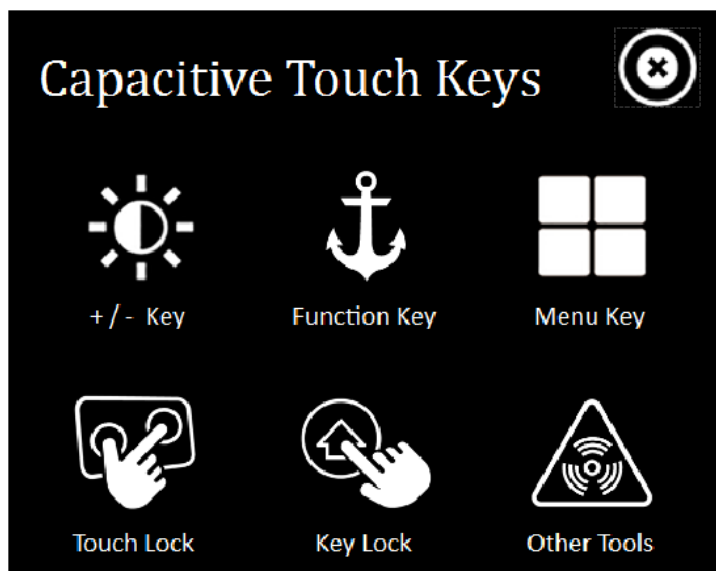
This HotTab Key Lock / UnLock option allows users to set the physical touch keys lock function.



Icon Status Description

Icon	Icon Description
	Icon shown in white means the physical touch keys are currently unlocked. The text below the icon shows the current status (Unlocked in this case).
	Icon shown in orange means the physical touch keys are currently locked. The text below the icon shows the current status (Locked in this case).

To lock the physical touch keys, perform the following:

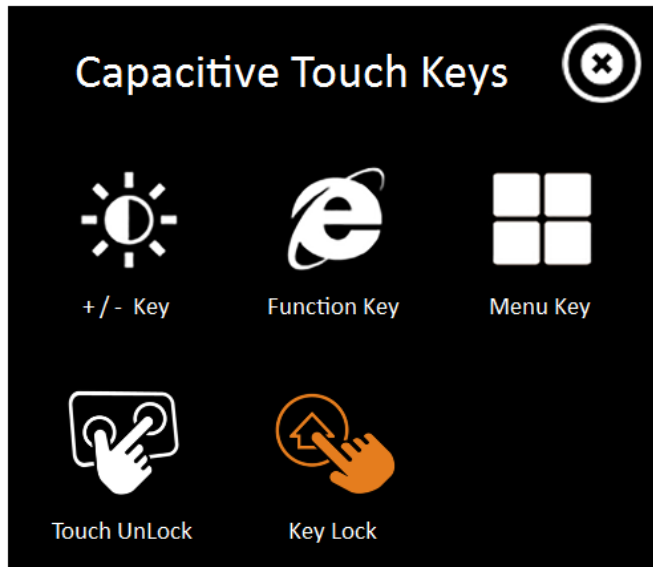
1. Open the HotTab utility by double clicking on the HotTab Utility icon in Windows System Tray.




2. Tap on the **Key UnLock**  option then the physical touch keys will be locked, and the icon will turn orange to show that lock is activated: 

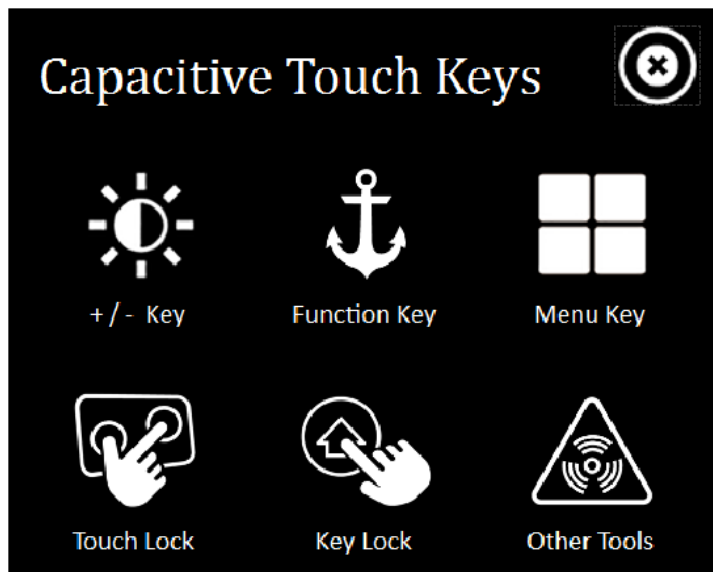
To unlock the physical touch keys, perform the following:

1. Open the HotTab utility by double clicking on the HotTab Utility icon in Windows System Tray.



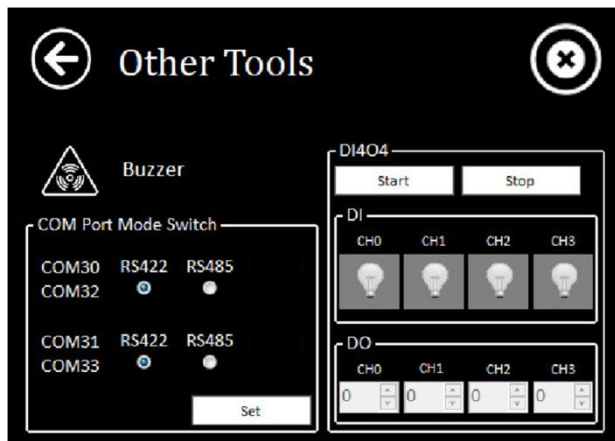
2. Tap on the **Key Lock**  option then the physical keys will be unlocked, and the

icon will turn white to show that lock is no longer activated:



Setting the Key Lock Key

This HotTab Key Other Tools allows users can operation other Built-in function.
(COM ports setting from COM30~COM33)



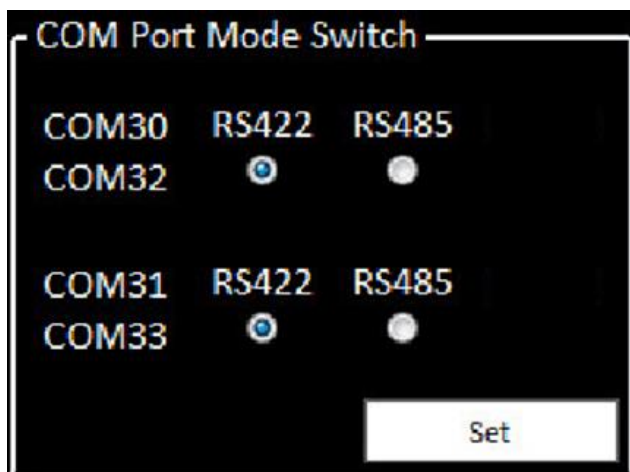
1. Buzzer

Tap on the **Buzzer** option , the built-in buzzer will action.



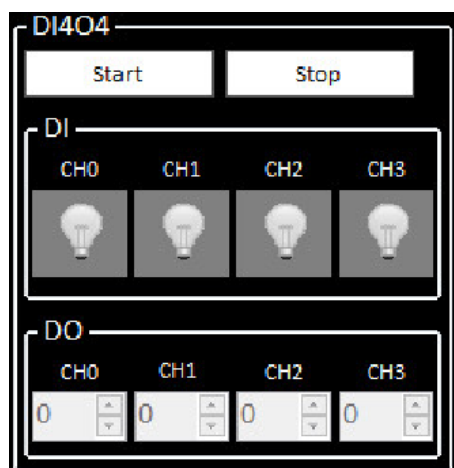
2.COM Port Mode Switch

NMEA 0183 ports can be change serial status for RS422 or RS485 in this operating mode.



3.DI4O4

The Digital Input / Digital Output can be set in this operating mode.
(COM ports setting at COM23)





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