15/19/24/26” Panel PC
ECDIS Marine

R15IH3S-MRA3FP
R19IH3S-MRA1FP
W24IH3S-MRA1FP
W26IH3S-MRA1FP

Quick Start Guide

V1.0

Document Part Number: 91521110100E

Please read these instructions carefully before using this product, and save this manual for future use.

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Warranty

Winmate Inc. 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 data 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 1W16Axxxxxxxx means October of year 2016.

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.

ALTERNATING CURRENT / MISE À LE TERRE!
The Protective Conductor Terminal (Earth Ground) symbol indicates the potential risk of serious electrical shock due to improper grounding.
Le symbole de Mise à Terre indique le risqué potential de choc électrique grave à la terre incorrecte.

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1 Getting Started

Congratulations on purchasing Winmate® ECDIS Marine Series Panel PC. The design meets the requirements of industrial marine standards, including IEC60945 4th Edition, DNV2.4, IACS E10.

Modern marine sector requires durable devices that can withstand long periods submersed in water. Winmate ECDIS Marine Series Panel PC is suitable for navigation, ship automation, and surveillance, rugged industrial and light military applications.. Flat surface is easy-to-clean and delivers aesthetically pleasing look. Due to dimmable backlight the Panel PC suitable for high and low ambient light conditions. You can mount the Panel PC on the bridge of a ship.

The device powered by Intel® 5th Generation Core™ i5-5200U 2.2GHz processor and supports various Windows-based operating systems: Windows 10 IoT Enterprise, Windows Embedded 8.1 Industry PRO, Windows Embedded 8 Std, Windows Embedded Std. 7, and Windows 7 PRO for Embedded System. The Panel PC features user-friendly and resistant to scratches PCAP touch-screen. These models sealed with front IP 65 dust and water proof

All Winmate® ECDIS Marine Series Panel PCs meet the requirements of industrial marine standards, including IEC60945 4th Edition, DNV2.4

Winmate® ECDIS Series Marine Panel PC offers the following features:

- Projective capacitive multi-touch screen
- Intel 5th ® Generation Core™ i5-5200U 2.2GHz
- Edge-to-edge narrow bezel design and fanless cooling system
- Color calibrated for ECDIS compliance
- Capacitive touch keys for quick function access and display control (Support ECDIS DAY, DUSK, and NIGHT mode switching)
- Optional 4 x COM port (NMEA 0183 protocol) 422/485 switchable by software
- Compliant with marine standards (DNV2.4, IEC 60945 4th, IACS-E10)
- Support capacitive touch key lock / touchscreen lock function

Model Number Naming Rule

R19IH3S-MRXXFP

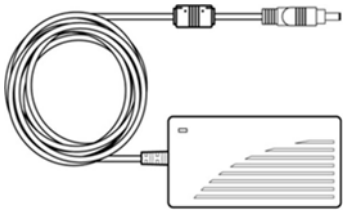
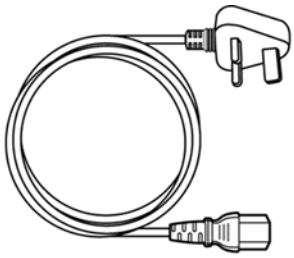
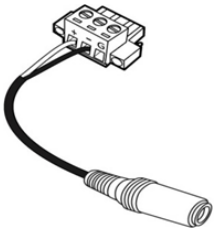
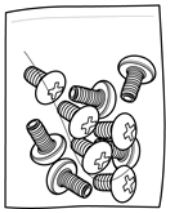
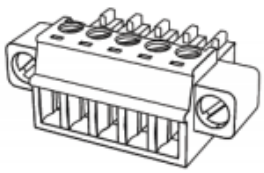
Item	Description
R	Panel Type
19	Panel Size
IH3S	CPU Platform
MR	Mechanical Type
XX	Panel Model
FP	Touch Type

Unpacking

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.

Accessories

The factory shipment list:

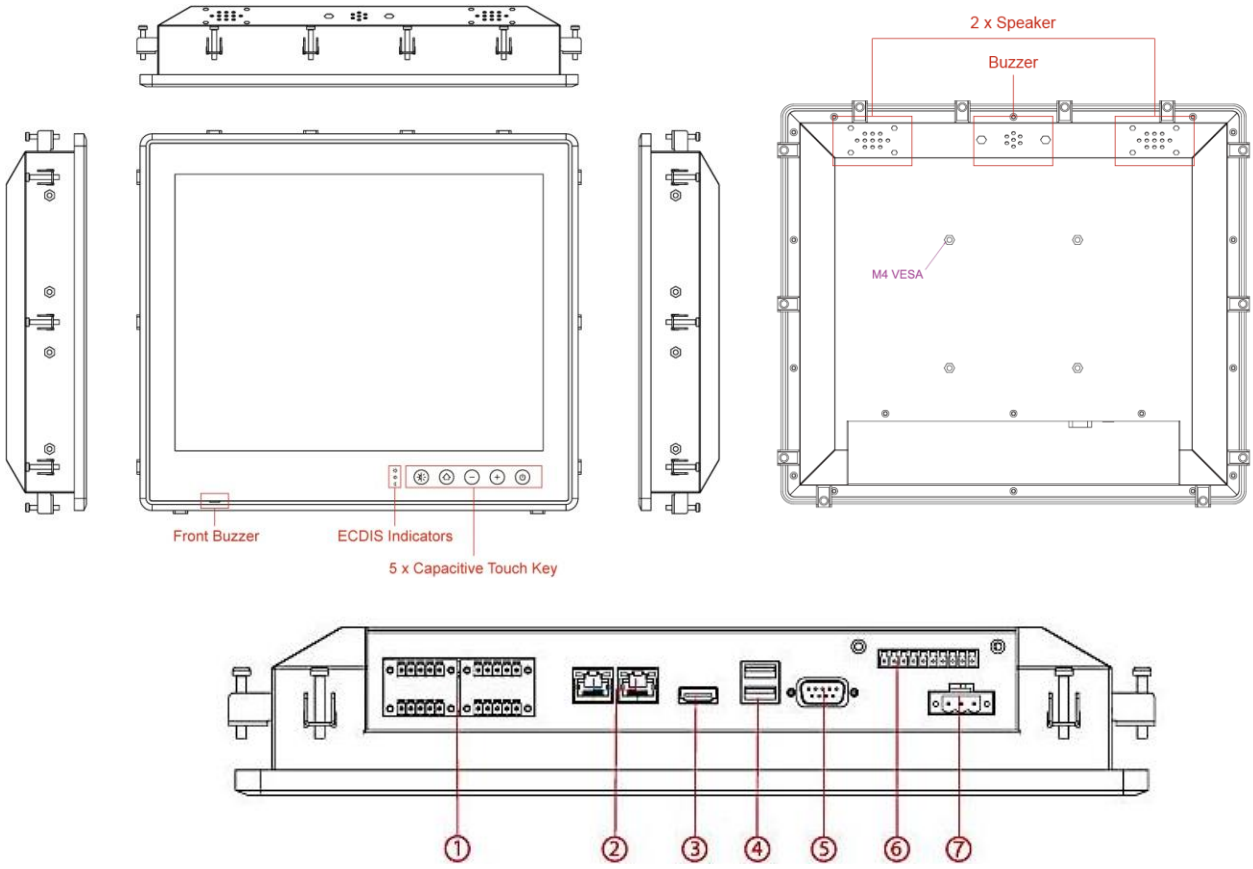
Panel PC	**Driver CD & User Manual**	**Quick Start Guide (Hardcopy)**
		
AC Adapter (12V/ 80W)	**Power Cord** (varies in appearance by region and country)	**3-pin Terminal Block** (Phoenix type)
		
M4 x 12 Black Screws **Notice:** Only to be used to secure the Panel PC onto a console from the rear side. If you prefer your own bolts, make sure to use M4 x 30mm in length.	***Optional 4 x 5-pin Terminal Block 3.81** (Phoenix Type) *For NMEA port*	

** 4 x 5-pin Terminal Block 3.81 is an optional accessory and may be included in your package based on your order.*

***AC adapter, 3-pin terminal block, and power cord shipped with Panel PC for testing purposes only.*

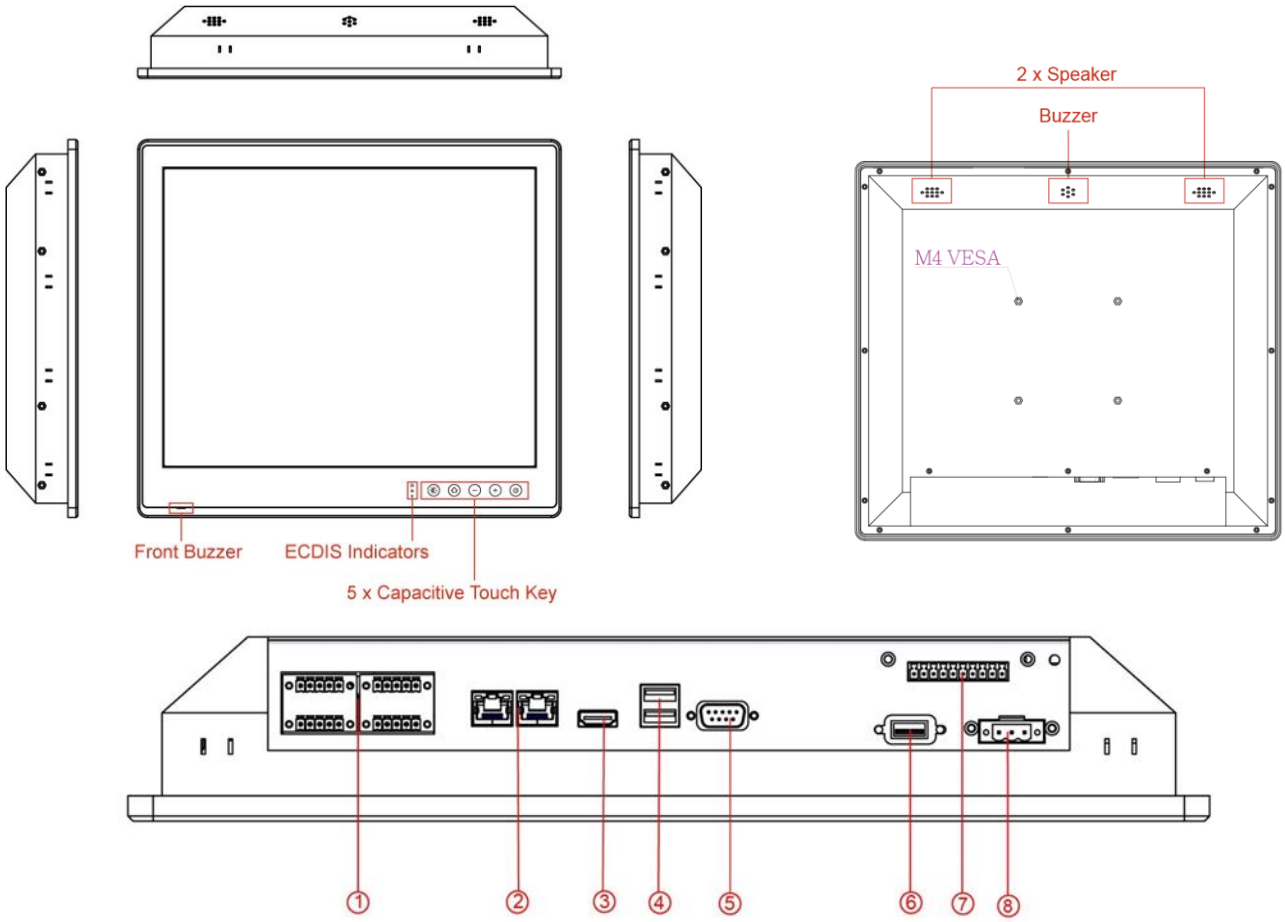
Description of Parts

Appearance 15”



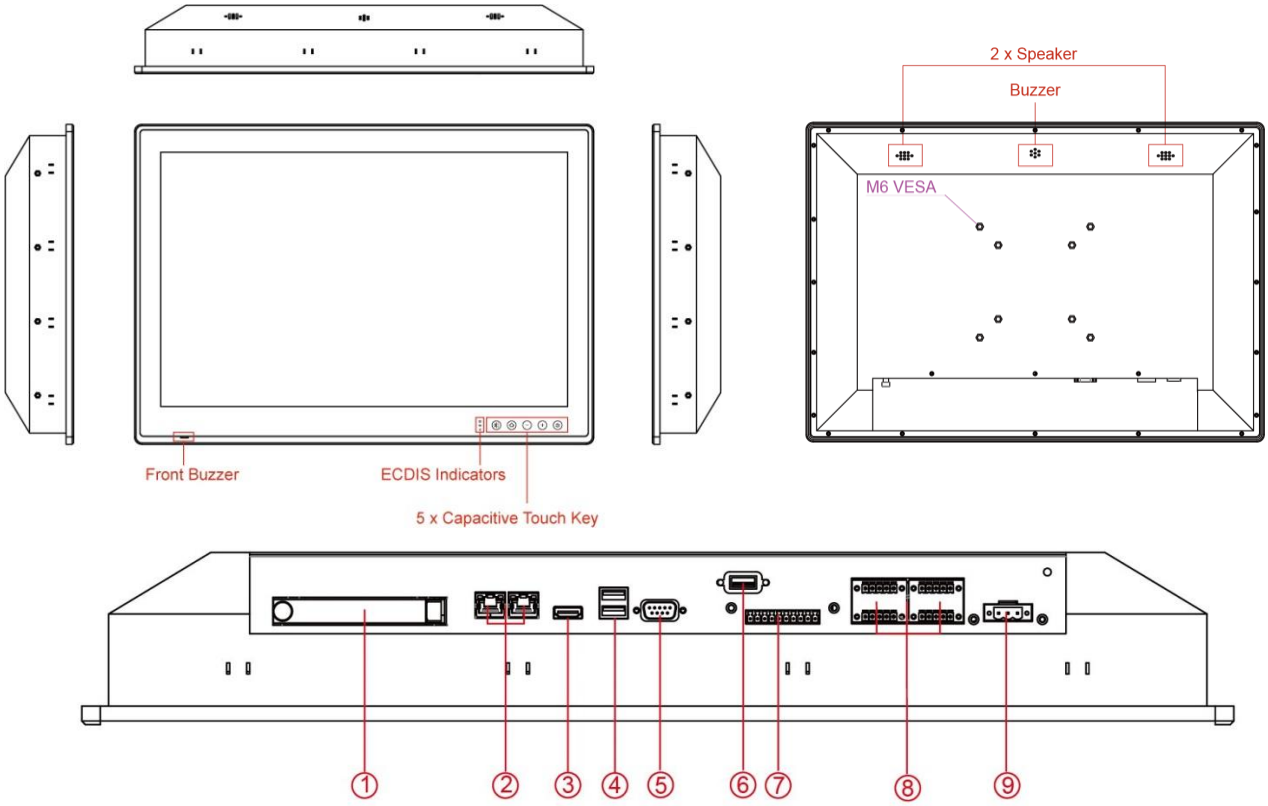
No	Description	No	Description
①	4 x NMEA 0183 Port (optional	⑤	1 x RS232/422/485
②	2 x RJ-45 LAN	⑥	1 x DI/DO 8 Channel (optional)
③	1 x HDMI	⑦	1 x DC Power Input
④	2 x USB 3.0		

Appearance 19”



No	Description	No	Description
①	4 x NMEA 0183 Port (Optional)	⑤	1 x RS232/422/485
②	2 x LAN (RJ-45)	⑥	1 x USB 2.0
③	1 x HDMI	⑦	1 x DI/DO 8 Channel (Optional)
④	2 x USB 3.0	⑧	1 x DC Power Input

Appearance 24” and 26”



No	Description	No	Description
①	1 x 2.5" Removable HDD	⑥	1 x USB 2.0
②	2 x LAN (RJ-45)	⑦	1 x DI/DO 8 Channel (Optional)
③	1 x HDMI	⑧	4 x NMEA 0183 Port (Optional)
④	2 x USB 3.0	⑨	1 x DC Power Input
⑤	1 x RS232/422/485		

Capacitive Touch OSD Control Panel

Capacitive touch OSD control panel is located on the front of your Panel PC.

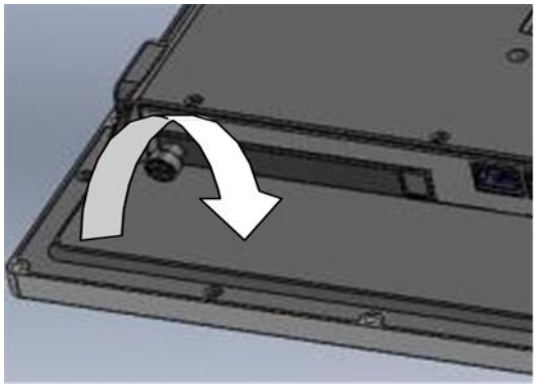
ECDIS Mode Indicator			Capacitive Touch Keys		
Icon	Function	Description	Icon	Function	Description
	Day Mode	Lights up when ECDIS brightness adjusted to day mode		Function Key Default setting: ECDIS Mode	**Default:** Switching ECDIS standard range mode (Day / Dust / Night mode)
	Dusk Mode	Lights up when ECDIS brightness adjusted to dusk mode		Menu/ Home	Switch to Menu or Desktop
	Night Mode	Lights up when ECDIS brightness adjusted to night mode		Brightness/ Volume	To decrease brightness/volume of panel
				Brightness/ Volume	To increase brightness/ volume of panel
				Power	Power on/off control

Installing 2.5" Removable HDD

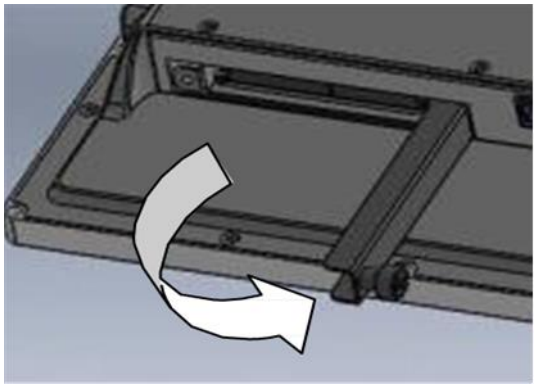
The 24” and 26” Marine Panel PC ECDIS series has tray for SATA hard disk. No tools required to install the hard disk. Follow the instructions below to quickly install/remove the hard disk.

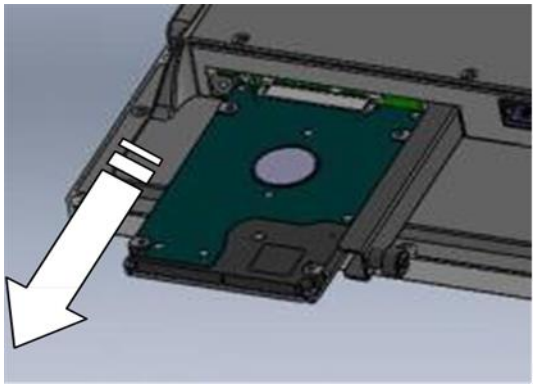
Step 1 Disconnect the device from the power source.

Step 2 Loosen the thumb screw beside the valve of hard drive bay.



Step 3 Open the valve and pull out the bracket with hard disk.





Step 4 Replace the hard disk, be sure to check if the hard disk inserted correctly to the hard disk bay.

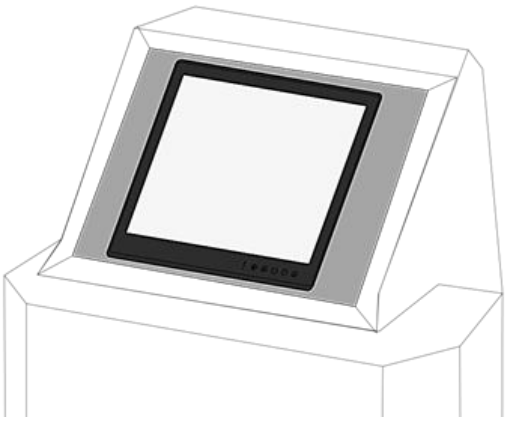
Step 5 Insert the bracket back and carefully tighten the thumb screw.

2 Mounting

There are two most common mounting solutions for Panel PC – Panel Mount from the rear side and VESA Mount. This section explains how to mount ECDIS Marine Panel PC.

Panel Mounting

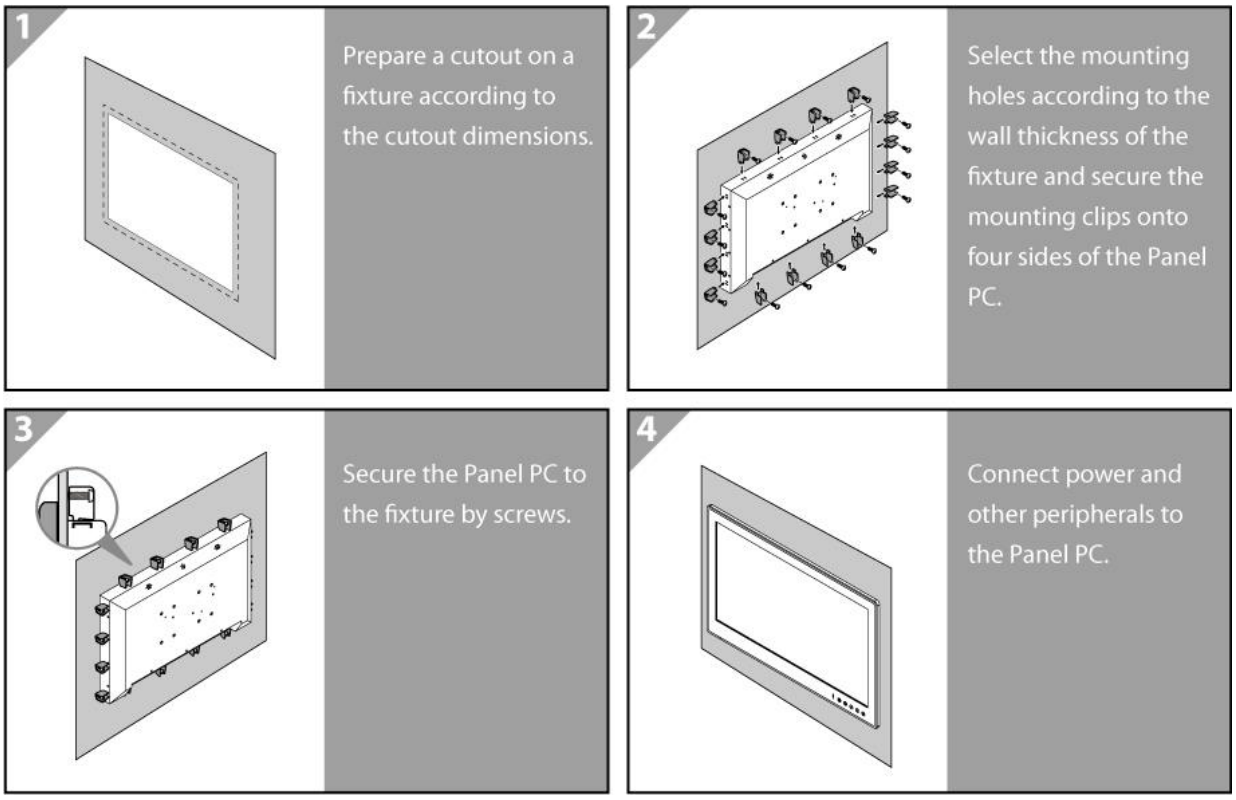
Winmate provides mounting clips for installation onto a wall or into console by request.



Make sure you console cutout matches the Panel PC cutout dimensions.

Use either short or long screws based on the thickness of the fixture.

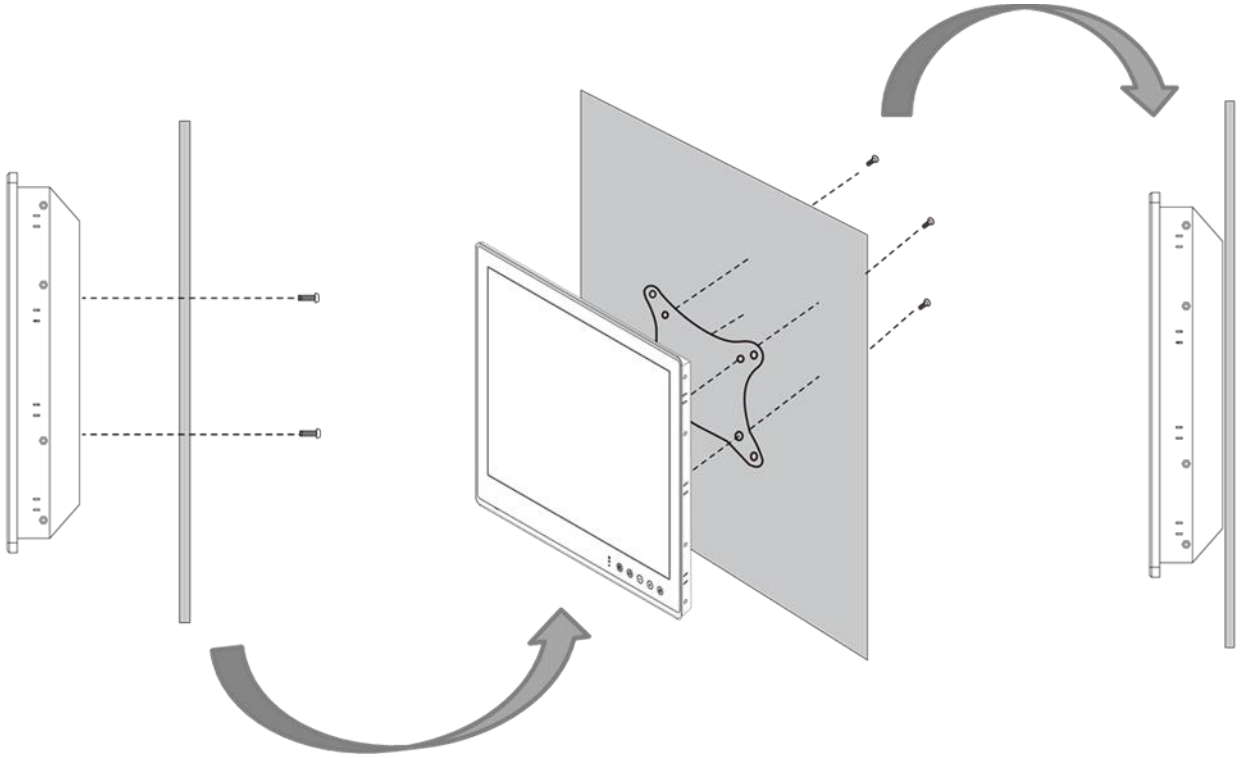
Cutout dimension (W x D in mm)			
15”	19”	24”	26”
338 x 288	408 x 359	572 x 363	598 x 408
Mounting Kit		**Mounting Kit**	
Mounting Clips: 12pcs Short screws: 15mm M4 Long screws: 30mm M4		Mounting Clips: 16pcs Short screws: 15mm M4 Long screws: 30mm M4	



VESA Mounting

Winmate provides VESA and Wall Mount Kits by request.

VESA Plate Dimensions			
15”	**19”**	**24”**	**26”**
100 x 100	100 x 100	100 x 100 100 x 200	100 x 100 100 x 200
Screw Hole Diameter			
M4 D=3mm	M4 D=5mm	M4 D=5mm	M6 D=5mm



Mounting Steps:

1. Screw VESA bracket to the fixture (ex. wall) with four screws (refer to the table above for screw hole diameter).
2. Place the device on VESA bracket.
3. Connect all cables and peripheral devices.
4. When the installation is complete, plug the power cord into a grounded AC outlet. Turn on the power.

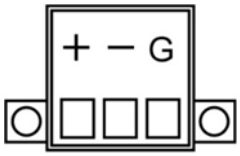
NOTE:
Notice that both hooks on bracket should lock the notches on the back cover of the device.

3 Installation

Connector Description

DC Input Connector

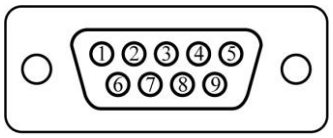
DC terminal block power source input compact design meets the maritime application. The 3-pin terminal block is to be secured that the cable to screw terminal.



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

Serial Port Connector

The Marine Panel PCs support COM1 ports to comply with maritime accessories sensor units. Connect Standard D-SUB 9-pin connector to connect on the Marine Panel PC to make it a control center.

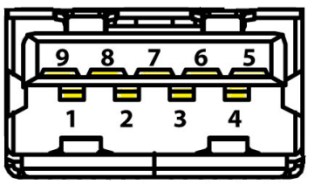


Pin №	RS-232	RS-422	RS-485
1	DCD	TxD-	D-
2	RXD	TxD+	D+
3	TXD	RxD+	NC
4	DTR	RxD-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

Serial COM1 settings can be configured for RS-232, RS-422 or RS-485 by BIOS setting.

Two USB 3.0 Connectors

Use standard USB type A cable to connect any device that use USB interface for expansion functions.



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+		

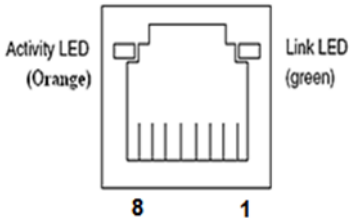
USB 2.0 Connector

Use standard USB2.0 type A cable to connect any device that use USB2.0 interface for expansion functions.

Pin №	Signal Name	Pin №	Signal Name
1	+5V	2	Data-
3	Data+	4	GND

LAN (RJ45) Connector

The Marine Panel PC supports one 10/100/1000 Mbps Ethernet interface for connecting to the internet.



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

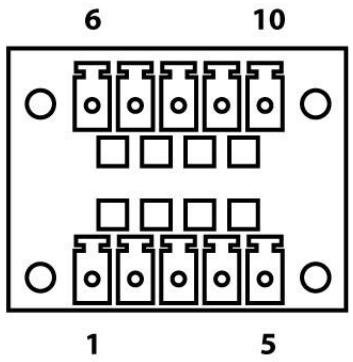
HDMI Connector

Connect HDMI A Type19-pin female output connector to the display

Pin №	Signal Name	Pin №	Signal Name
1	TMDS_DATA2+	2	GND
3	TMDS_DATA2-	4	TMDS_DATA1+
5	GND	6	TMDS_DATA1-
7	TMDS_DATA0+	8	GND
9	TMDS_DATA0-	10	TMDS_CLOCK+
11	GND	12	TMDS_CLOCK-
13	CEC	14	NC
15	DDC_CLOCK	16	DDC_DATA
17	GND	18	5V
19	Hot Plug Detect		

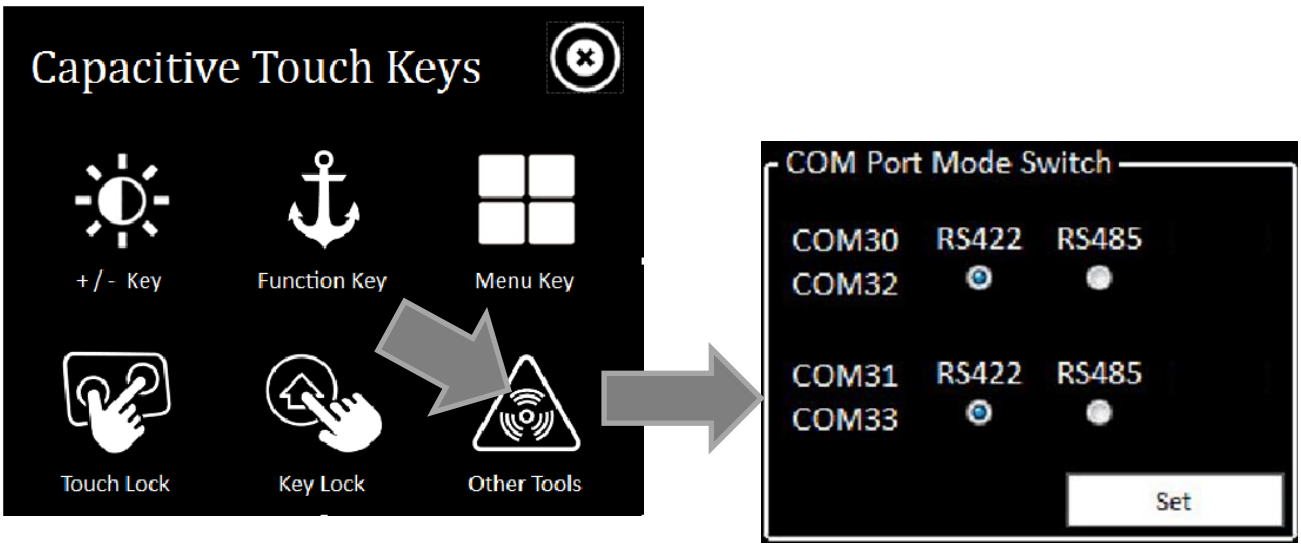
NMEA 0183 Port (Optional)

By request the Marine Panel PC comes with NMEA port on the bottom panel. The figure shows the pin assignments.



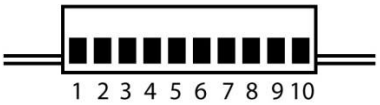
Pin No.	Signal Name	Pin No.	Signal Name
1	TxD1-	6	TxD2-
2	TxD1+	7	TxD2+
3	GND	8	GND
4	RxD1-	9	RxD2-
5	RxD1+	10	RxD2+

NMEA 0183 ports can change serial status for RS-422 or RS-485 in COM Port Mode Switch.
To change serial status go to **HotTab Main menu** > **Other Tools > COM Port Mode Switch**



Digital Input and Output Connector (Optional)

Four-channel isolated Digital Input and Output. On-board optical isolation protection output up to 1.5KVdc.

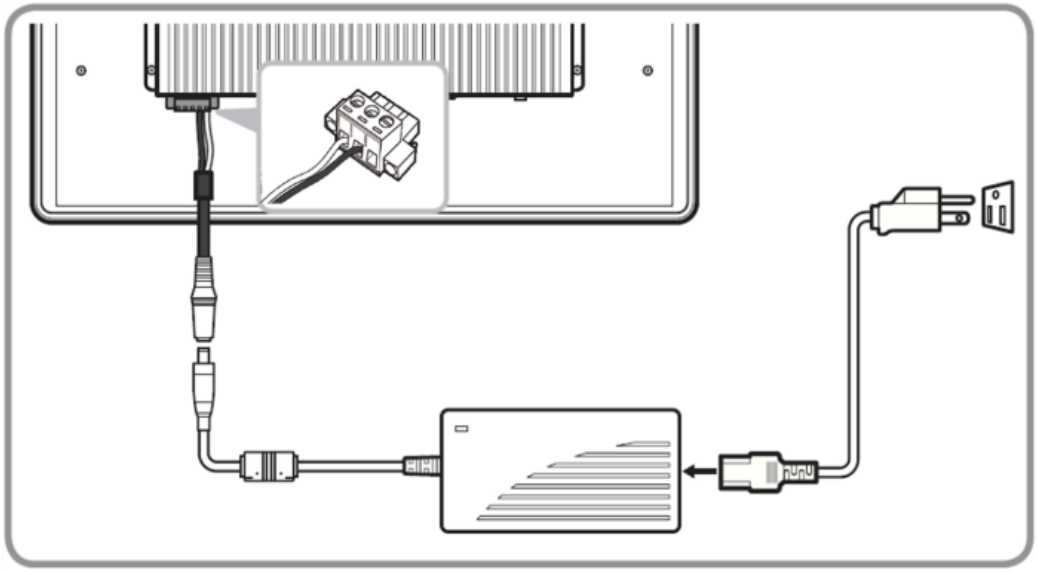


Pin No.	Signal Name	Description
1	DO_COM	DO Port Reference Voltage Level
2	DO_0	Digital Output 0
3	DO_1	Digital Output 1
4	DO_2	Digital Output 2
5	DO_3	Digital Output 3
6	ISOGND	Isolated Ground
7	DI0	Digital Input 0
8	DI1	Digital Input 1
9	DI2	Digital Input 2
10	DI3	Digital Input 3

Powering On or Off

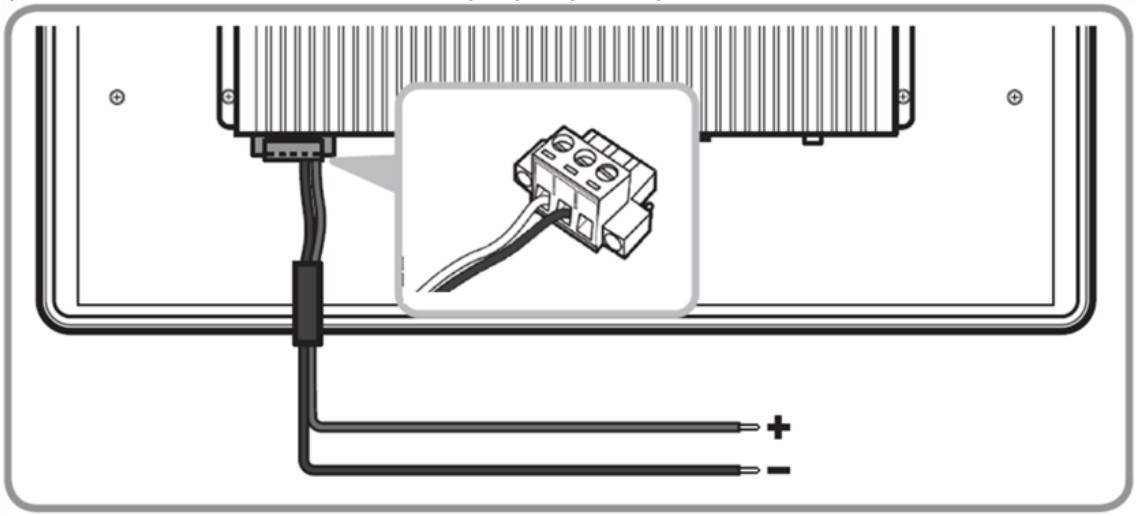
Connecting to AC Power Source (For testing)

1. Plug one end of the terminal block cable firmly to the DC IN Jack.
2. Plug the other end of the terminal block plug to the AC adapter (12V 80W).
3. Connect the AC adapter to the power cord.
4. Plug the power cord to a working AC outlet.The device will boot automatically.



Connecting to DC Power Source

1. Insert the exposed wires of the DC Power Cable to the appropriate connectors on the terminal block plug.
2. Plug the terminal block plug firmly to the DC IN Jack.
3. Connect the other end of the DC power cable (wires with lug terminals that are labeled **+** and **–** to the terminals of the 9~36V DC Power Source. Ensure that the power connections maintain the proper polarity.



For more detailed instructions refer to the User Manual.

4 Operating the Device

Turning On and Off

Turning On

Press and hold the capacitive power key ( ) for 4 seconds until the blue LED backlight light up.

Turning Off

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

1. Make sure to close all programs that are open on the Desktop. Start Screen programs 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. Tap on the **Settings** charm.
4. Tap on **Power**.
5. Tap 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)

ECDIS Mode Brightness Adjustment

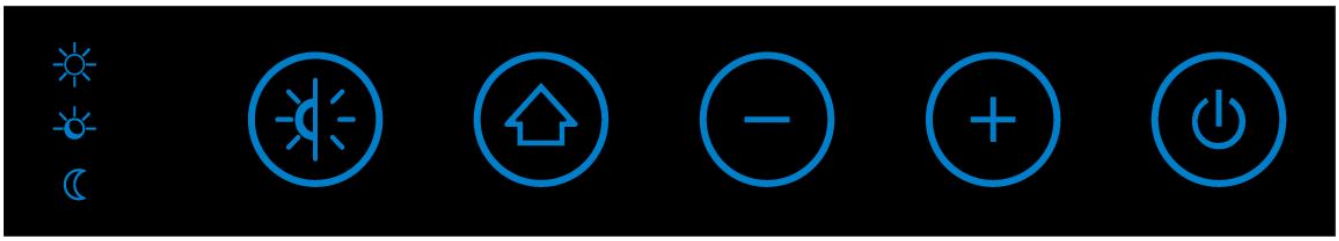
Winmate provides quickly adjustable Buttons for the ECDIS mode switch (DAY, DUSK , NIGHT)

ECDIS Mode Brightness Adjustment

Switch the ECDIS mode by tapping capacitive touch key. Tap the "ECDIS Mode Quick Button", and the level of brightness is automatically adjusted according to ECDIS standard. ECDIS Mode Indicator shows the mode that has been activated.

The sequence of the switching modes is as follows:

DAY Mode → DUSK Mode → NIGHT Mode → DAY Mode.

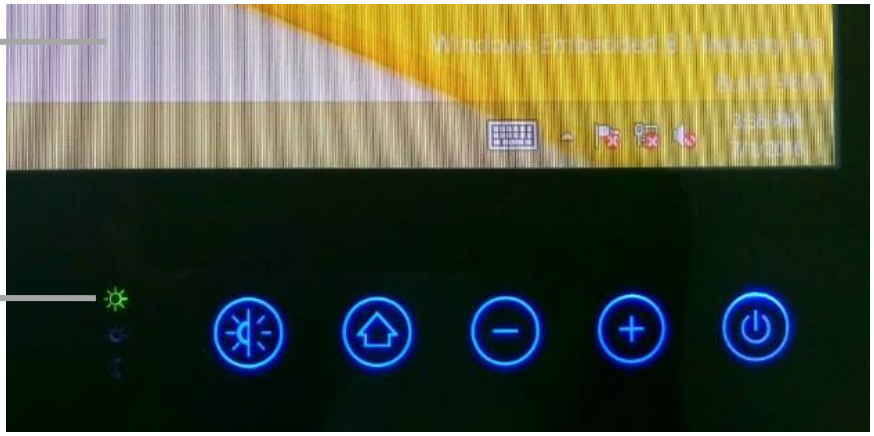


ECDIS Mode Indicator			Capacitive Touch Key		
Icon	Function	Description	Touch Key	Function	Description
	Day Mode	Lights up green when ECDIS brightness adjusted to day mode		ECDIS Mode Quick Button	Switching ECDIS standard range mode (Day /Dusk / Night mode)
	Dusk Mode	Lights up green when ECDIS brightness adjusted to dusk mode			
	Night Mode	Lights up green when ECDIS brightness adjusted to night mode			

NOTE:
In ECDIS Mode (DAY, DUSK, NIGHT) you can adjust the brightness manually. **Notice** when the manually adjusted brightness parameter does not comply with the ECDIS Standard, the LED indicator light disappears. You should switch the ECDIS mode quick button again to correct the brightness parameter to ECDIS.

Switching to DAY Mode

The brightness was adjusted to DAY Mode



DAY Mode LED Indicator

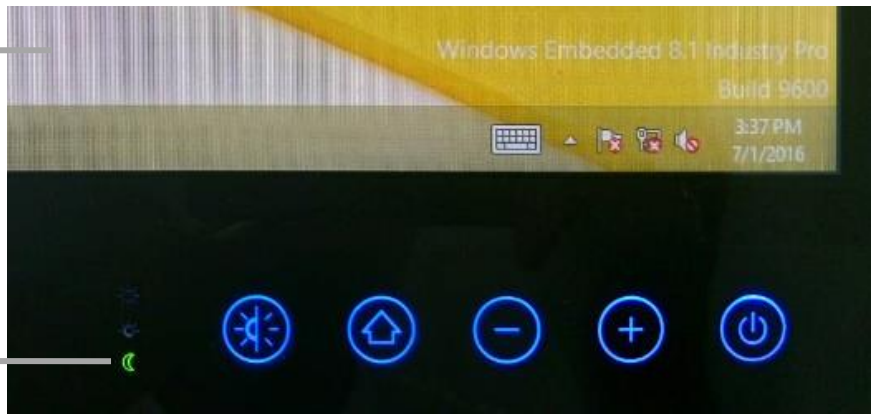
Switching to DUSK Mode

The brightness was adjusted to DUSK Mode

DUSK Mode LED Indicator

Switching to NIGHT Mode

The brightness also be adjusted to NIGHT Mode

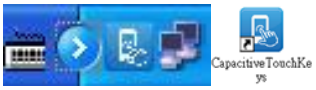


NIGHT Mode LED Indicator

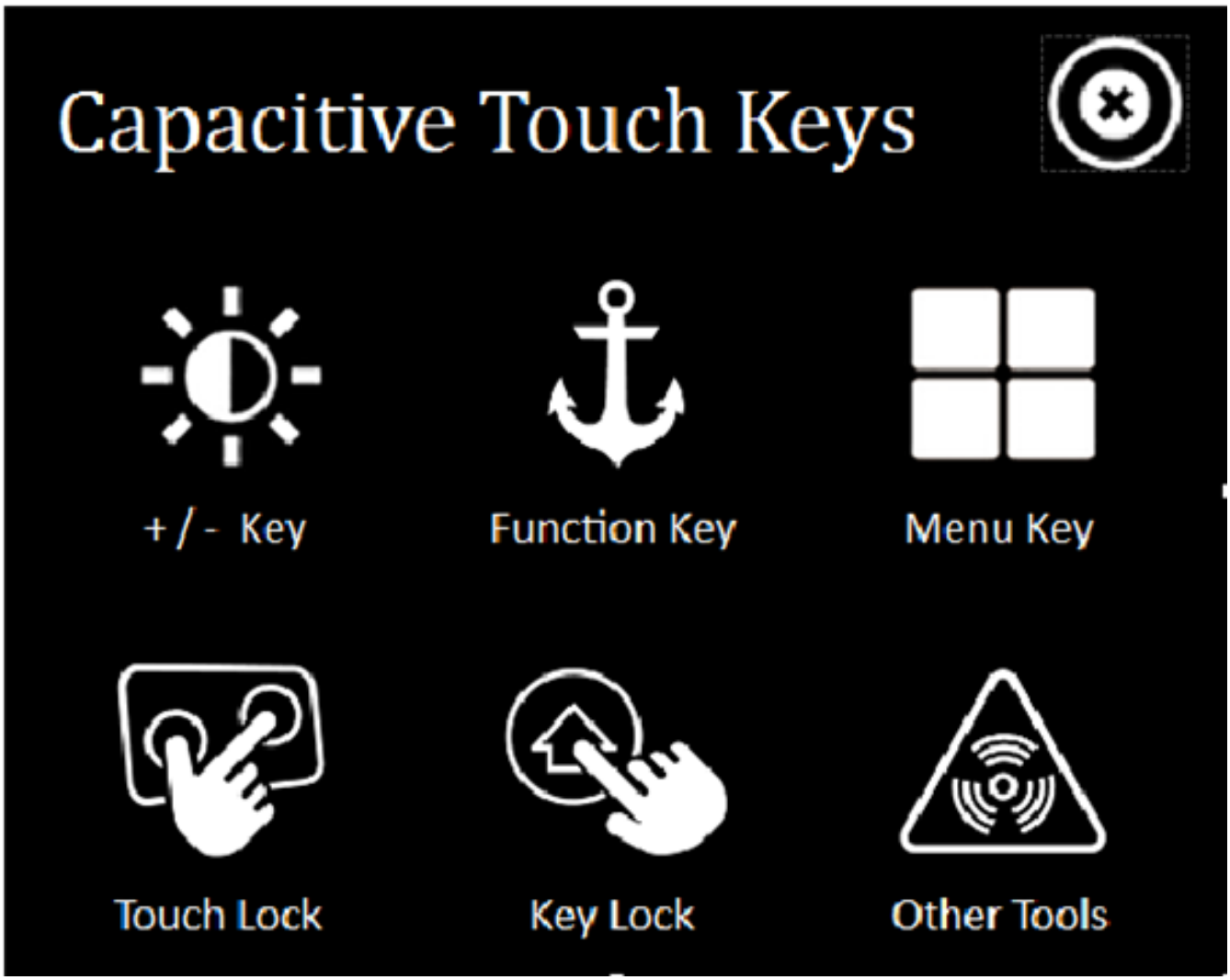
Hot Tab Introduction

Hot Tab is a tool that is used to control system settings. If your order includes pre-installed OS, the Hot Tab control utility is also included in to your system.

You can find HotTab Utility Icon in Windows System Tray:



Hot Tab Menu



Icon	Sub-menu	Description
+/- Key	Volume	Controls Volume. Plus (+) touch key is mapped to raise the volume and Minus (-) touch key is mapped to lower the volume.
	Brightness (default)	Controls the screen Brightness. Plus (+) touch key is mapped to raise screen brightness and Minus (-) touch key is mapped to lower screen brightness.
	Adjustment Scale	Allows switching between user's preset Brightness level. Plus (+) touch key sets the screen brightness to user's preset maximum level and Minus (-) touch key sets the screen brightness to user's preset minimum level. In other words, user can switch between two different brightness levels quickly.
Function Key	**Default:** ECDIS mode brightness adjustment	If you don't need ECDIS, you can configure function key mapping.
Menu Key	Home Mode	When the user taps the capacitive key while running an application, the display screen will show the Desktop.
	Metro Mode (for Windows 8)	When the user taps the capacitive key while running an application, the display screen will show the Metro UI
Touch Lock	Lock the touchscreen	Tap on this button to lock the touchscreen.
		To unlock the screen, tap anywhere on the touchscreen, and pull the slide bar to the right.
Key Lock	Key Unlock	White icon means the physical touch keys are currently unlocked. The text below the icon shows the current status (Unlocked in this case).
	Key Lock	Orange icon means the physical touch keys are currently locked. The text below the icon shows the current status (Locked in this case).
Other Tools	Buzzer	Tap on this icon to activate built-in buzzer.
	COM Port Mode Switch	Change the status of the NMEA 0183 ports (optional feature) for RS-422 or RS-485.
	DI4DO4	In this menu user can configure Digital Input / Digital Output parameters (COM ports setting at COM23).

For more details about Hot Tab and its functions please refer to User Manual.

5 Software Developer Support

Winmate provides the following drivers for ECDIS Marine Panel PC with Intel® Core i5-5200U Broadwell processor:

Item	Driver	Windows 7	Windows 8	Windows 10
1	Chipset Driver	☑	☑	☑
2	Graphics Driver	☑	☑	☑
3	Audio Driver	☑	☑	☑
4	Ethernet Driver	☑	☑	☑
5	Fintek Com Port Driver	☑	☑	☑
6	Intel® Management Engine Software	☑	☑	☑
7	USB 3.0 Driver	☑	☒	☒

Winmate provides the following development kits (SDK) for ECDIS Marine Panel PC with Intel® Core i5-5200U Broadwell processor:

Item	File Type	Description
1	Watchdog Driver, SDK and AP	Driver, AP and development kit for Watchdog
2	Digital I/O Driver/ SDK	Driver and development Kit for Digital I/O
3	Marine Driver/ AP	Capacitive Touch Keys Driver & AP
4	ECDIS Color Table	The table of colors used in ECDIS system

You can download SDK and Drivers from Winmate Download Center or Winmate File Share.

Winmate Download Center

/www.winmate.com>Support > Download Center > Marine Grade > Marine PPC Core i5 > Development Kit/ Driver

Or follow the link below: http://www.winmate.com/DownCenter/DownLoadCenter.asp?DownType=0617

Winmate File Share

www.winmate.com> File Share > Public Document > Panel PC > Multi-Touch ECDIS Marine Panel PC> IH32 (Broadwell 5200U)> Development Kit/ Driver

Or follow the link below: https://winmate.box.com/v/ECDIS-Marine-PPC-IH32

NOTES

Winmate Inc.
9F, No.111-6,Shing-De Rd., San-Chung District,
Taipei 241, Taiwan, R.O.C

Tel: 886-2-8511-0288
Fax: 886-2-8511-0211
Email: sales@winmate.com.tw
Official website: www.winmate.com