# Pilot in Display

## Marine Series Products

Leading Marine Displays and Embedded Computers



Type Approved Product

**Product & Marketing**

Winmate Communication Inc.

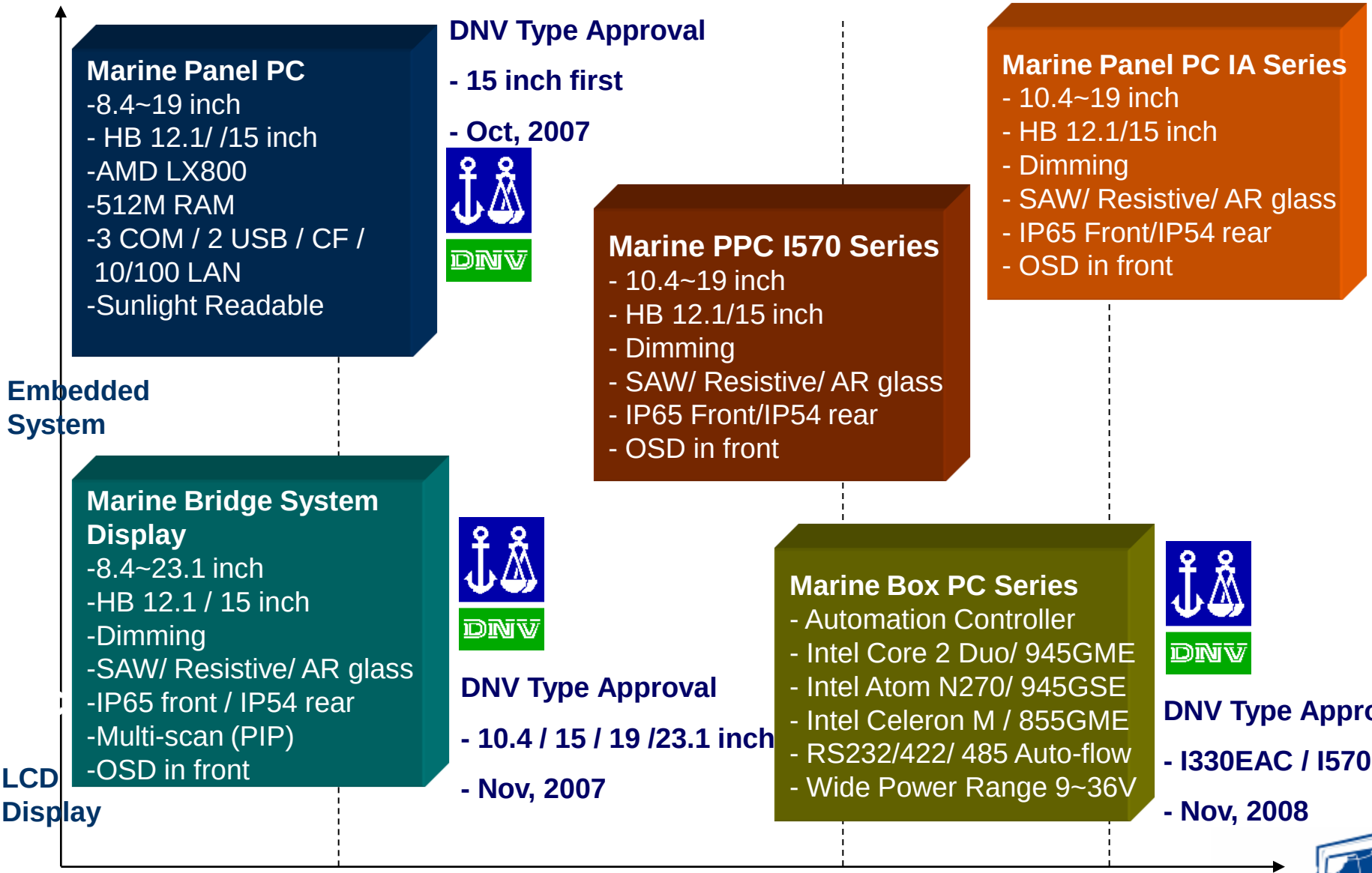
# Topics Overview

- Marine Series Product Line
  - Marine Series Roadmap
  - Features
  - Selection Guide
  - Mounting Guide
  - Light Marine Series
  - Marine PPC I570 Series
  - FAQ





# Marine Series Roadmap

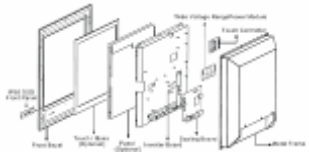



MARINE SERIES SOLUTION

# Features

| | |
|---|---|
| **High Quality Display/ Touch / AR Glass**  | 8.4" to 23.1 High Quality TFT LCD<br>**- 5 Wire Resistive/ SAW touch / Anti-reflection Glass**<br>**- High Brightness (12.1"/15")**<br>Sunlight Readable<br>**- Transflective Enhanced** |
| **Hyper Dimming**<br>**OSD Front Membrane**  | PWM control inverter<br>**- Nearly 0%~100% duty ratio**<br>**- Front side control VR knob** |
| **Anti-Corrosion / IP65 Proof**  | Anti-Salt/ Corrosion<br>**- Aluminum Housing w/ Powder Coating**<br>IP Grade proof **(IP54 rear for Marine LCD Display)**<br>**- IP65 front : AR glass& 5wire resistive**<br>**- IP54 front : SAW touch** |
| **Wide Voltage Range Power Input**   | Wide Voltage Input range<br>**- 9-36V DC wide voltage range acceptable**<br>**- 90~265V AC Input version by request (12.1" above)**<br>**- 23.1" support both 24V DC & AC** |

# Features (continuous)

| | |
|---|---|
| **Wide Temperature range**   | Wide Temp range<br>**- Normal Std : -10 to 55 degree C**<br>**- Extended Wide temp. range -20 to 60 deg. C by request** |
| **Mechanical Design**  | Ruggedized Anti-Shock/ Vibration<br>**- terminal block Lockable Power cable**<br>**- Special mechanical design for shock/ vibration**<br>**- Mobile Hard Disk or Flash Disk** |
| **User Interface**  | System Integration for<br>**- Ease of use front OSD control panel**<br>**- VR knob control brightness manually**<br>**- Multi-scan PIP function (LCD)**<br>**- CF / USB/ RS232/ RS485 expansion (Panel PC)** |
| **Certificates/ Approvals** | Product Design follows IEC 60945 Certificates<br>**- CE / FCC Class B**<br>Approvals<br>**- DNV Type Approval** |

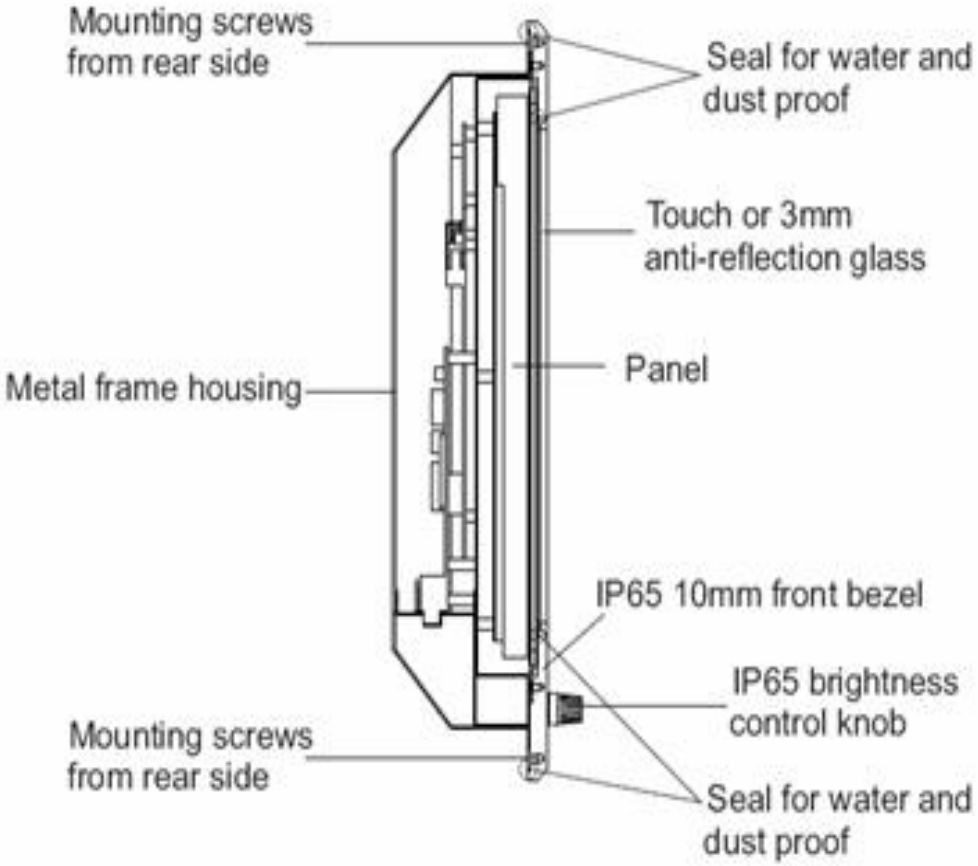
# Marine Mounting Guide

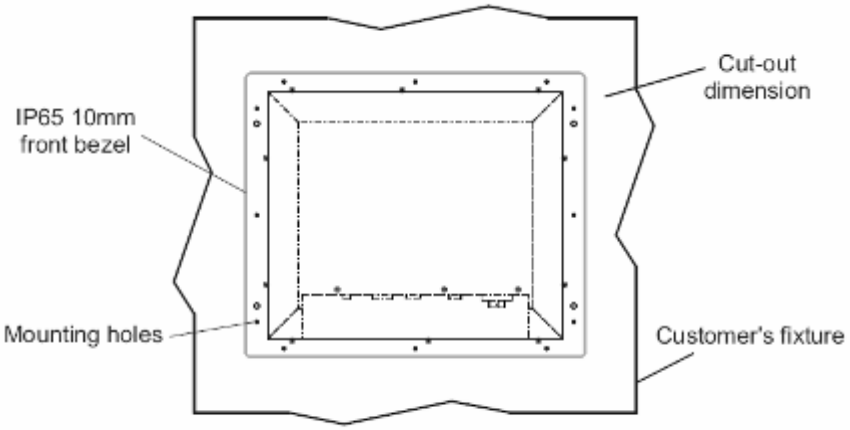
| Mounting Approach | Marine Series 8.4” to 23.1” |
|---|---|
| IP 65 Panel (Flush) Mount | Yes (SPCC : Material ) |
| VESA Mount | Yes |
| Bracket Stand / Roof Mount | Yes (Bracket optional) |





# Marine Machines Guide (cont.)



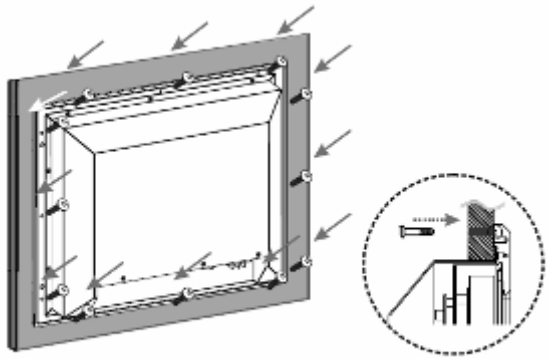

Check the mechanical and mounting concept as below first.
The fixture cut-out dimension and mounting holes based on drawing.

# Marine Mounting Guide



Put the marine product on the fixture (console) from the front, and screw by four M6 x 30 mm black bolts with nuts.

Use M4x 15mm bolts to drill through the fixture into the mounting holes on the rear side of IP65 front bezel. (The quantity of mounting screws based on drawing)



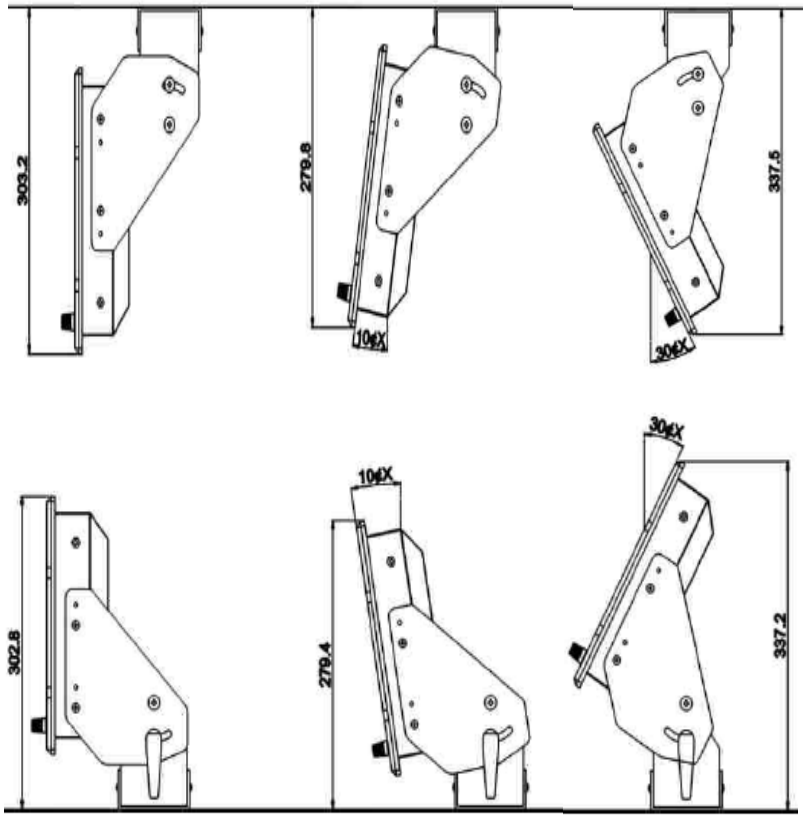


Check the finished mounting concept

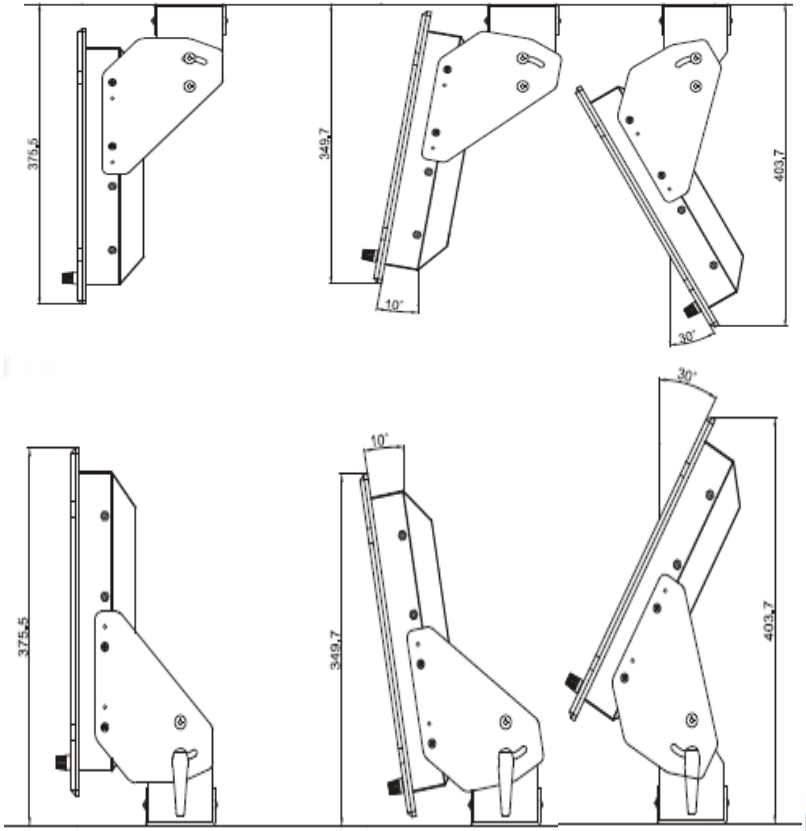
**** Note：8.4” to 15” Marine Series with VESA hole in back, 17” above by Special Request (Need to change Design)**

# Marine Mounting Guide (Cont.)

## 8.4 “ ~ 12.1”




## 15 “ ~ 23.1”



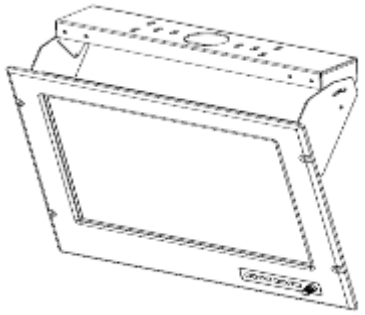
# Marine Mounting Guide (Cont.)

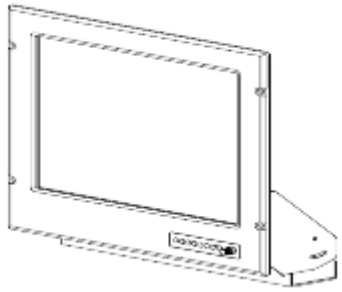
- Bracket Stand











# About Anti-corrosion Coating...

- Default Color：Black
- Optional Color：By request (Repeat minimum order 10pcs)
  - Gary
  - Navy Blue
  - Yellow
  - Pantone Number



# Transflective

- Default：8.4″ 10.4″ 15″ 17″ 19″ 20.1″
- Reference Outdoor Readability：

**Outdoor Readability**

| Model Number | R08T200-MRT1TR | R10L100-MRM2TR | R15T600-MRA1TR | R17L500-MRA2TR | R19L300-MRA1TR | R20L100-MRA2TR |
|---|---|---|---|---|---|---|
| Ambient light(nit) | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| | 80,000 | 80,000 | 80,000 | 80,000 | 80,000 | 80,000 |
| Brightness gain(BL off)(nit) | 432.7 | 437.5 | 680 | 490 | 500 | 312.5 |
| | 620 | 670 | 870 | 630 | 630 | 456 |
| | 1,180 | 1,150 | 1,320 | 900 | 830 | 680 |
| Reflectance(net)(%) | 1.20% | 1.20% | 1% | 0.83% | 0.50% | 0.70% |
| | 1.15% | 1.15% | 0.98% | 0.70% | 0.65% | 0.68% |
| | 1.16% | 1.10% | 0.90% | 0.45% | 0.40% | 0.45% |

# Hyper Dimming

- Nearly 0% to 100% by testing
- 23.1” dimming ratio 3% to 100% (Original PWM ratio)





# IP Proof with Touch

| Product / Touch/Glass | Marine LCD  | Marine Panel PC  |
|---|---|---|
| 5 Wire Resistive | IP65 front & IP54 rear | IP65 front |
| Anti-Reflection Protection Glass | IP65 front & IP54 rear | IP65 front |
| SAW Touch | IP54 front & IP54 rear | IP54 front |

# Embedded Automation Controller

- Features
  - Born to Industrial Automation, M2M Application
  - The highest performance with the best system thermal solution.
  - Robust, Solid Alu. Extrusion
  - RS232/422/485 Auto-Direction w/ 2.5KV DC Isolation Resistance Protection
  - 4 Digital Input/4 Digital Output Solution
  - 9~36V DC Wide Range Power w/ 1500V DC Isolation Protection (Optional)
  - Support VESA / Wall Mount / Din-Rail Mount and Desktop Mount.





**Apply for DNV Maritime Certification Now! (Q3,08 finished)**

# Embedded Automation Controller

- Thermal Analysis
  - The Most Tough & Highest Performance for Core 2 Duo Solution.

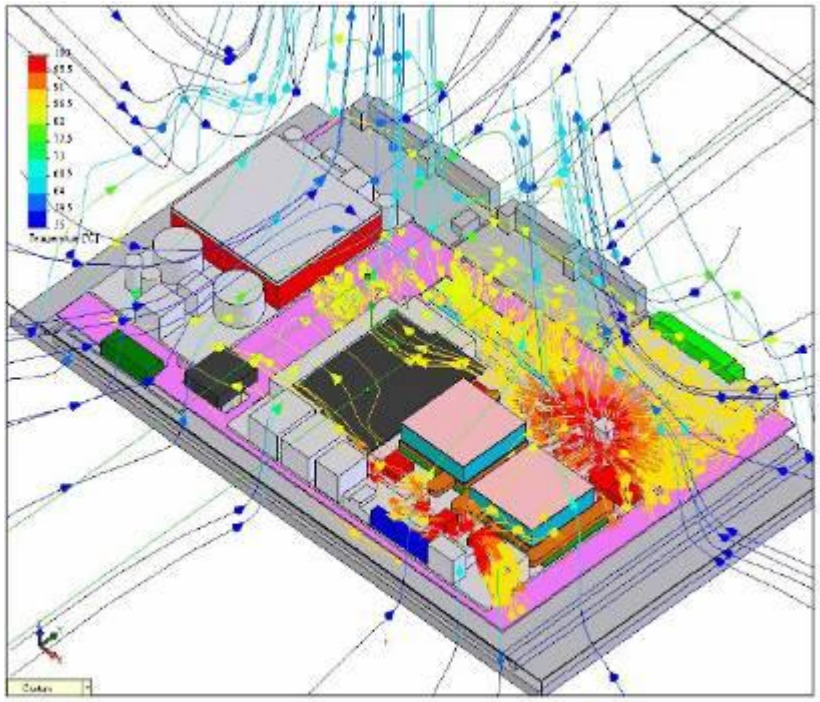


Figure 2 The flow trajectories in Cu-base Sink

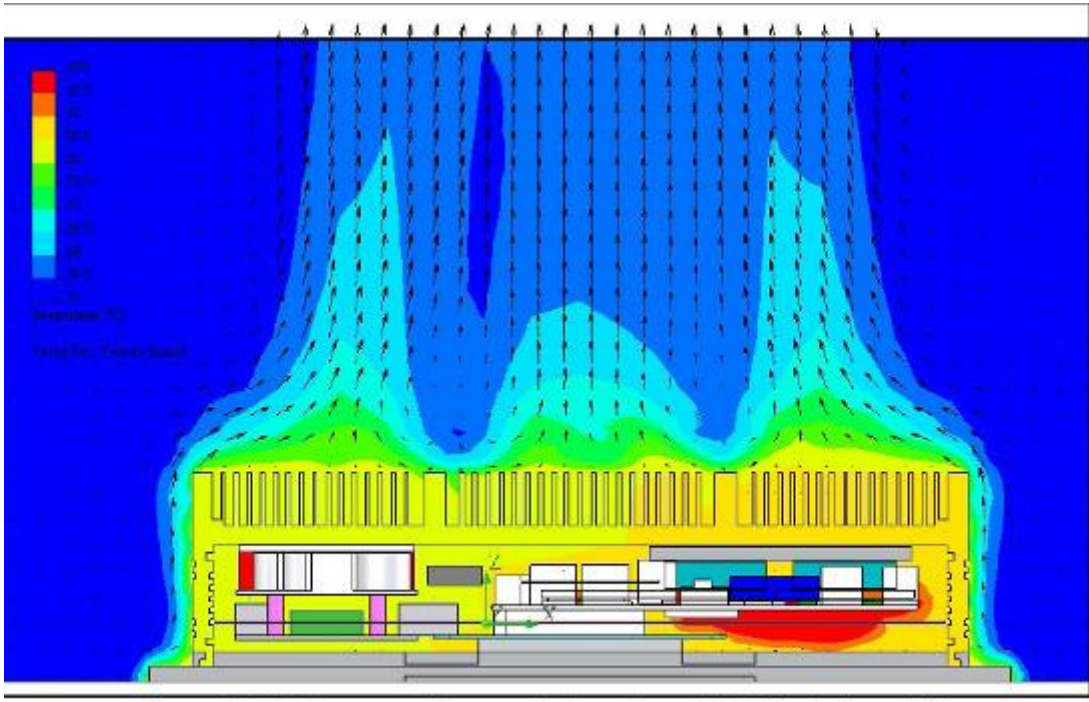
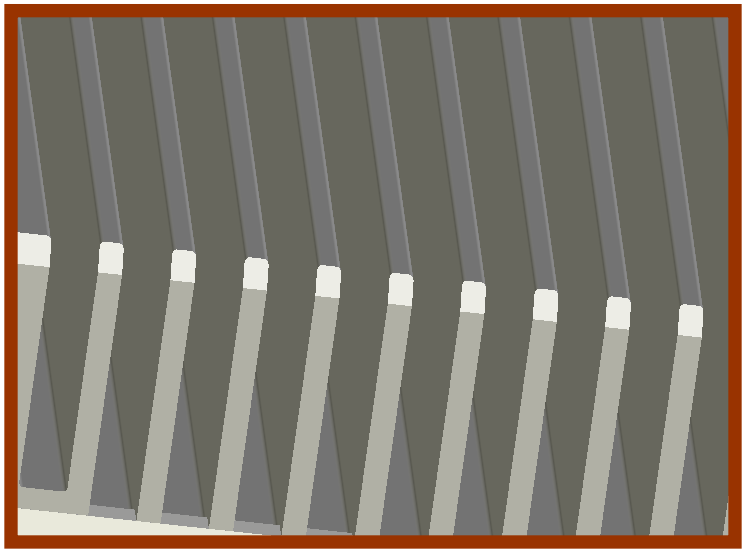


Figure 1 X-Y-plane-cut plot near the location of CPU in Cu-base Sink

# Great Thermal Conduction



- Following Thermal Convention Rule, our EAC Rugged Box has over 2~4 times efficiency than ever.
- Average 20% CPU Temperature Drop.



# EAC Box PC Selection Guide

| Model | Platform | CPU Perf. (Optional) | RAM | System Features | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Auto-Direction RS232 Ports (Isolation) | 9~36V DC Power Isolation *[1](Optional) | Digital I/O | USB port | GigaLAN | Audio(Line in/Line out/Micro in) | Mounting (VESA/ Wall-mount/ Desktop/ DIN-Rail ) | Dimension (mm) |
| **I330EAC-201** | Intel® 945GME / ICH7M Chipset | Intel® Core 2 Duo ULV 1.06GHz Core Duo ULV 1.2GHz Celeron M ULV 1.2 Celeron M ULV 1.06GHz | Max 2GB DDR2 667/533(1GB Default) | 4 | V | 4In/4 Out | 2 | V | V | V | 266x169x71 |
| **I530EAC-201** | Intel® 855GME / ICH4M Chipset | Intel® Pentium M 1.4GHz Celeron M 1.0 GHz | Max 1GB DDR 333 (1GB Default) | 4 | V | 4In/4 Out | 2 | V | V | V | 266x169x71 |
| **IA30EAC-201** | Intel® 945GSE / ICH7M Chipset | Intel® Atom N270 1.6GHz | Max 2GB DDR2 533(1GB Default) | 4 | V | 4In/4 Out | 2 | V | V | V | 266x169x71 |
| **I370EAC-201** | Intel® 945GME / ICH7M Chipset | Intel® Core 2 Duo ULV 1.06GHz Core Duo ULV 1.2GHz Celeron M ULV 1.2 Celeron M ULV 1.06GHz | Max 2GB DDR2 667/533(1GB Default) | 2 | V | N/A | 4 | V | V | V | 296x214x71 |
| **I570EAC-201** | Intel® 855GME / ICH4M Chipset | Intel® Pentium M 1.4GHz Celeron M 1.0 GHz | Max 1GB DDR 333 (1GB Default) | 2 | V | N/A | 4 | V | V | V | 296x214x71 |
| **IA70EAC-201** | Intel® 945GSE / ICH7M Chipset | Intel® Atom N270 1.6GHz | Max 2GB DDR2 533(1GB Default) | 2 | V | N/A | 4 | V | V | V | 296x214x71 |

*[1] Defualt Power Input is 24V DC with Termianl Block.

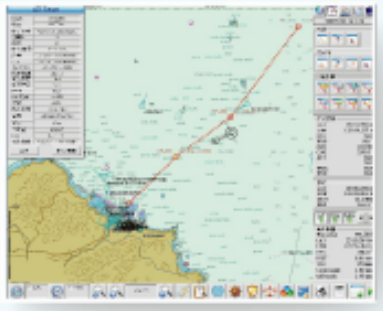
* OS Support: Windows XPembedded,Windows XP,Windows CE 5.0, Linux 2.6.11
* Storage Options: 2.5" 40GB HDD (Default), 2.5" Automobile 40GB HDD, 2.5" 4GB Flash Disk (SSD), 4GB Industrial Compact Flash Card; SSD and Industrial Compact Flash are required to survive in MIL810F/ IEC60068-2-27 Vibration /Shock std. environment.



# ODM Projects & System Integration

## Electronic Chart System (ECDIS / AIS)

- Support S-57 ENC Chart Display
- GPS / ARPA / Echo Sounder / Speed / Wind (NMEA 0183 format)
- Support AIS Target Display and Message Transmission
- Route Planning and Safety Detect
- Navigation Monitor and Warning Log ENC Chart Manage, Update Object Edit and Harbor Search



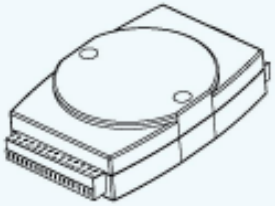
## Monitoring & Surveillance System

- Full Integration with Whole Ship's Electronic Signals (Generators, Gauges, Pumps, Power system...etc.)
- Integrated Hundreds of both Digital & Analog Sensors
- Alarm & Warning Pre-caution
- Easy for User to Control & Manage
- Space & Weight Saving for Bridge
- Keypad / Trackball & Touchscreen Compatible Operation



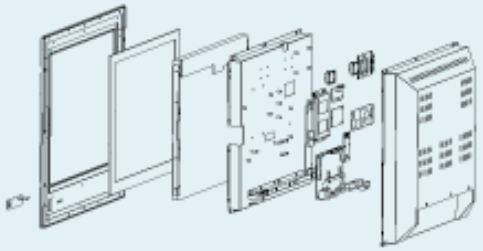
## Sensor Networking

- RS232 / 422 / 485 / Ethernet / USB Converters for Ship
- Analog Input / Output Data Acquisition and Control Module
- Digital Input / Output Data Acquisition and Control Module
- Isolation / Non-isolation Type
- ASCII / Modbus, RTU Protocol Support
- Watchdog Timer Function
- DIN-Rail Mounting / Panel Mounting



## Customized Solution

- System Integration for HW & SW
- Embedded Platform Fully Solution Choose (Intel, AMD, VIA Platform)
- 4.3" to 52" Panel Solution
- Resistive / Infrared / SAW / Capacitive
- Touchscreen Integration
- Highly Compatible Mechanical Design



# Reference case – 7”&10.4” Custom Panel PC

Commend Control Panel PC

Application

**7” &10.4” Panel PC with CANbus module for offshore application.**

Main Challenges

- **IP65/IP66 aluminum housing**
- **Software integration**
  - **Linux Debian**
  - **SW Dimming by MCU control**
  - **LED light dimm with LCD**
  - **CANbus Driver and API**

Main deliveries

- **Passed DNV certification test**
- **Modulized chassis / console mount type**
- **High quality, stylish Marine product**









# Reference case – Navy PPC

Aluminum Tooling Panel PC

Application

**17’, 20.1” and 42” Panel PC for**

**Navy supervision application.**

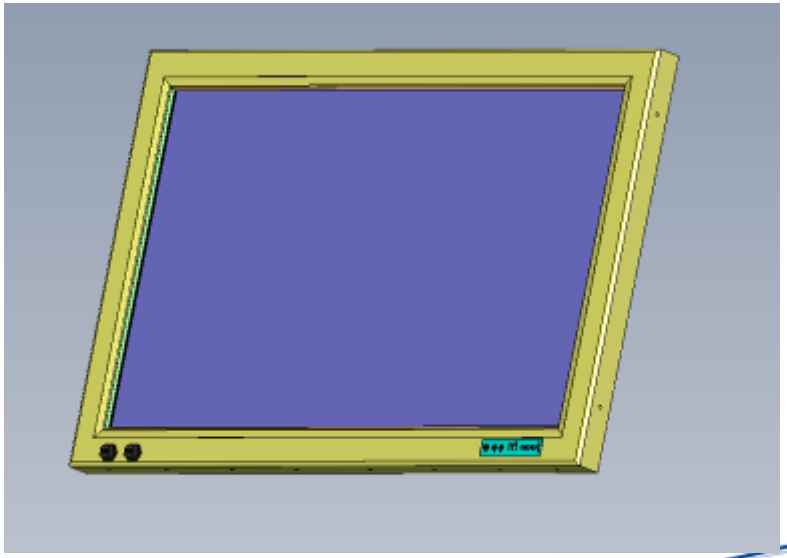
Main Challenges

- **Core2Deo high performance**
- **SW dimming control backlight**
- **Light sensor control LED indicator**

Main deliveries

- **Passed BV-RINA certification test**





# Reference case - 10.4PPC

Aluminum Tooling Panel PC

## Application

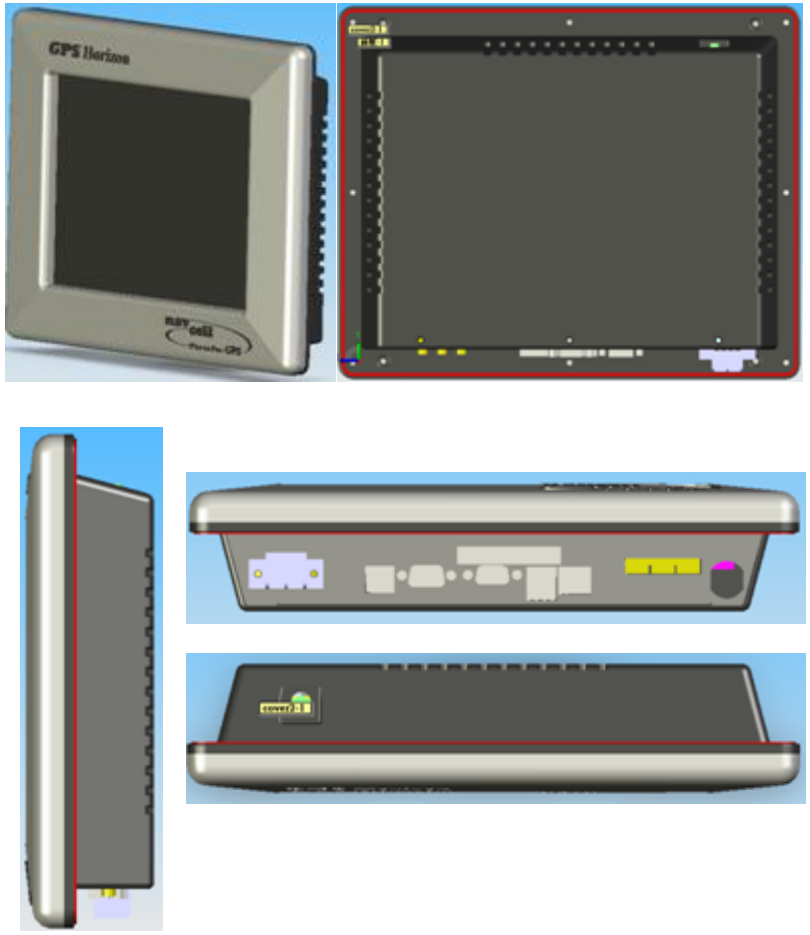
**10.4 Panel PC with GPS module and Mapping system for Yacht application (OBM).**

## Main Challenges

- **IP65 aluminum housing**
- **Software integration**
  - **MeshDriver**
  - **GPS module and antenna**
  - **Mapping chart system**

## Main deliveries

- **Passed Anti-Shock/ Vibration test**
- **Passed 50 deg.C /72Hr test**
- **Passed environment test**



# Reference case- 19”/26” LCD&PPC

Highly Integration Bridge System

Application

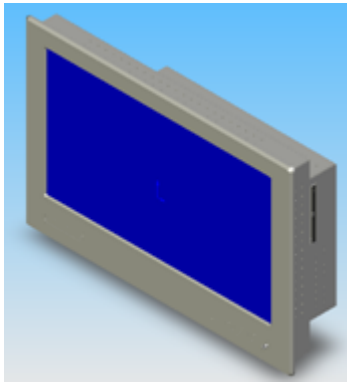
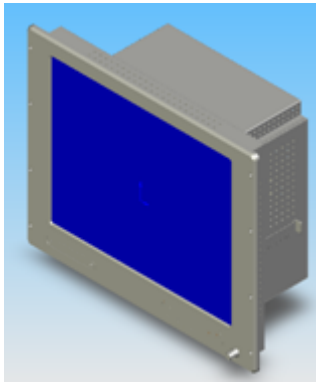
**Pared 19&26 PPC and LCD application for fish boat sensor control system.**

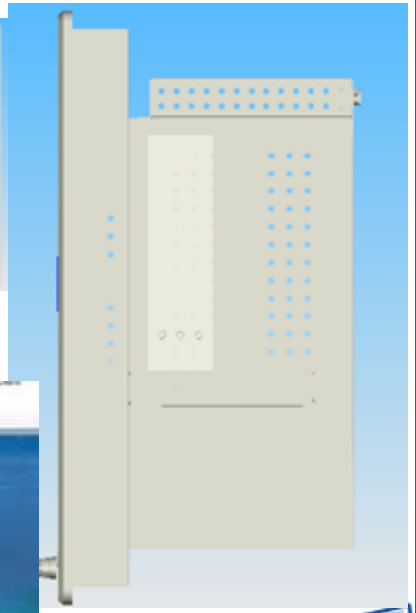
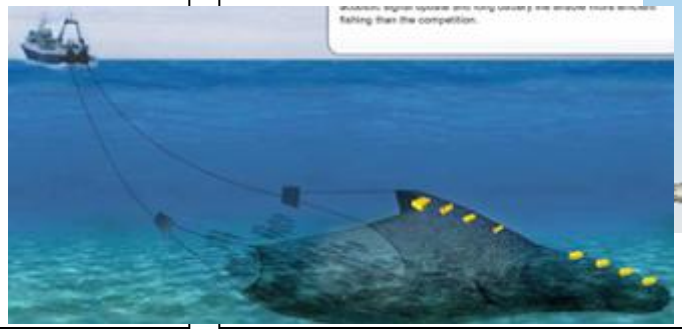
Main Challenges

- **Modulized integration of PC system.**
- **M/B plus A/D board**
- **Graphic Card (with riser card to fix)**
- **DVD**
- **USB hub**
- **SAW touch**
- **VR dimming 10% to 100%**

Main deliveries

- **Highly integration system**

# Reference case- USDDC 15”PPC&19”LCD

Marine Monitoring System LCD and PPC

## Application

**Marine Monitoring System for demo room application to Taiwan yacht market.**

## Main Challenges

- **Front side OSD control panel**
- **Front side speaker**
- **Two kind of DC input for demo**
- **Two COM for extension**
- **Dimming VR knob**

## Main deliveries

- **Passed environment test**



# Thanks



