

# EMRI





## STANDARD FEATURES

Single push button call to the below modes of operation from the active panel.

Cruise Control

Synchronized steering and propulsion

Maneuver Control

Force control at low speed

DP Control

Automatic position keeping

Auto Heading

Automatic heading keeping

Manual Heading

Manual steering

Wind Heading

Automatic heading to wind

Fore Pivot

Select fore pivot point

Mid Pivot

Select middle pivot point

Aft Pivot

Select aft pivot point

Relax

Select economic power use and accept larger deviations

## STANDARD FEATURES

Double push button call to the below modes of operation from the active panel.

Shift + DP Control

Selects Low Speed control with joystick set speed orders. (The controller is a speed pilot in the low speed range).

Shift + Auto Heading

Prepare/plan a new heading to steer for later execution. When next heading is entered press the "Execute" button.

Shift + Tiller Left / Or Tiller Right

In Auto Heading mode: Change heading to steer by 0.1 deg per click by the tiller.

Auto Heading + Auto Heading

With Cruise control the double click toggles between Radius & Rudder Limit controlled heading changes.

DP Control + DP Control

Single click the "DP Control" button to stop and then stay at virtual anchor. Double click the "DP Control" button to stop and then return to the anchor position where pushed.

Shift + Fore Pivot

Shortcut for the entering of the "Monitor Anchor" mode. (Alarm for Dragged Anchor). Use the "Menu" button to set the alarm radius.

## FLEXIBLE CONSOLE DESIGN

On Cruise-Liners and Giga-Yachts with plenty of console space, the EMRI DP-panels can be directly dropped down in the cut-outs on the consoles for easy "plug n play".

On Mega-Yachts with tighter console design the EMRI-control panels can be integrated into the overall foil-design, utilizing a common layout of buttons, texts and lamps.

The DP-System thereby appears to be a nicely integrated shipyard design.

## THE DISPLAY

A high brightness TFT display for signal for information and mode support.

Click the "Display" button to roll through 4 selectable programmable views.

With these displays additional wing monitors may be omitted.



The great idea is to save cables and to avoid the large DP-VDUs on the bridge wings.

Signals are transmitted over the CAN-BUS.



## THE MENU

- The menu is selected by pressing the “Menu” push button.
- Re-push the “Menu” to go further down in the menus.
- The menu is aborted by pressing “Display”
- The menu depends on ship’s configurations and modes available.

## JOYSTICS

- Machinery orders are given by the joysticks.
- Orders of a digital nature are given by the smaller joystick on the left panel side.
- We name this: “The Rocker Tiller” and use it mainly for turning.
- Click “left” for port turn orders, click “right” for stbd turn orders.
- Click “up” (ahead) for increasing, click “down” (astern) for decreasing a parameter.
- The right-side joystick is an x-y-z type and is proportional.
- This joystick is mainly used for movements, i.e. translation orders.
- The ergonomics is to move the joystick in the direction you want the ship to move.
- Panels are available in various versions, for in-or outdoor mounting or as portable panels.
- The outdoor joystick is protected by a rubber bellow.





# STEERING

In Cruise\_Mode, the Joystick is used for ordering propulsion in the x-direction.

When manual heading is selected the joysticks steering knob ( Z-axis) is used as a miniwheel for hand steering.

When Auto Heading is selected the system has a Gyro feedback.

When entering the “Auto HDG” mode, the ship continues with the previous heading “steady as she goes” and by default heading changes will be radius controlled.

The “Radius nm” is displayed on the VDU and is modified with the rocker tiller up/down.

Pressing the Auto HDG twice toggles between radius control and heading control.

The “Rudder Limit” is displayed on the VDU and modified by pushing the rocker tiller up or down.

Change heading with the Rocker Tiller, 1 degree pr. left or right click.

Fine adjust with 0.1 deg per click by pressing the “Shift” key while clicking.

Press “Wind HDG” to head up to the wind.  
You return to “Auto HDG” steering by clicking 1 deg left or right by the tiller.

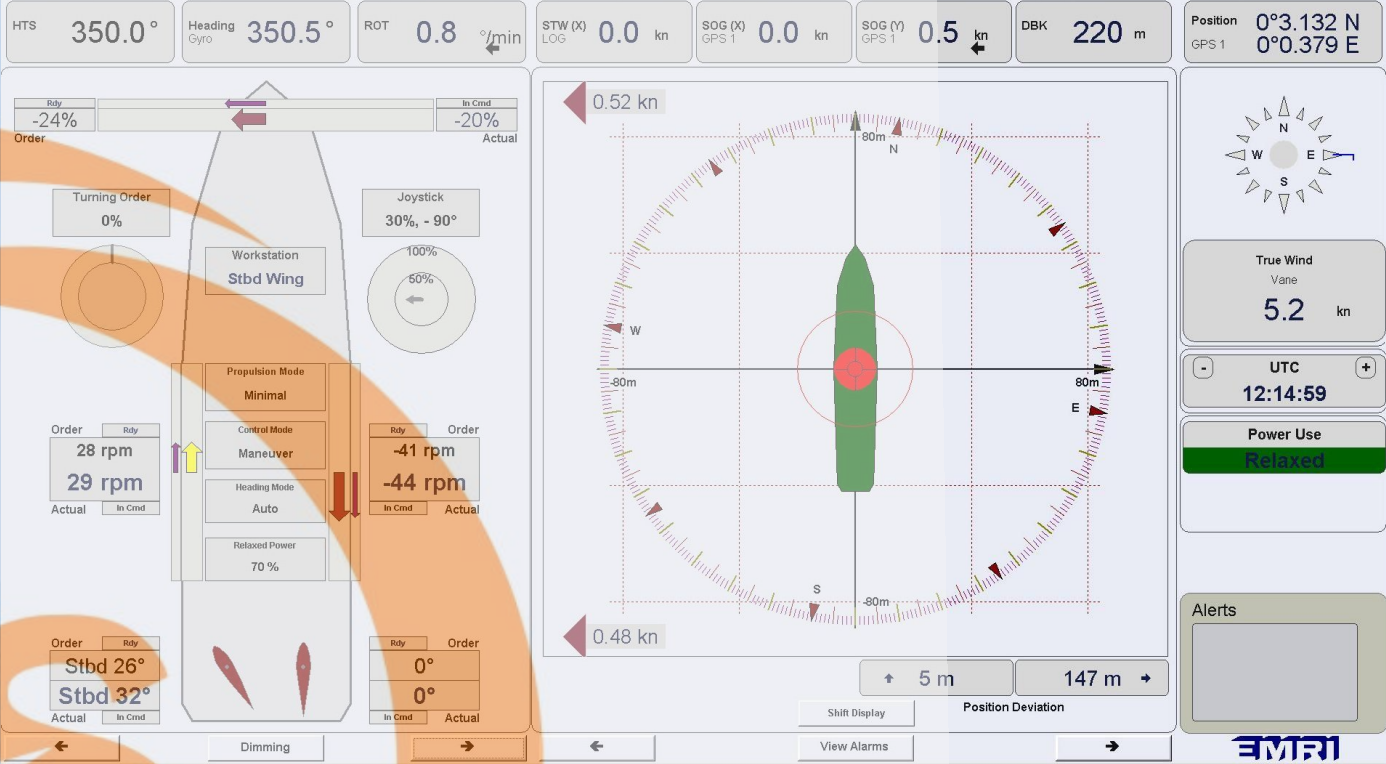
You also return to “Auto HDG” if the wind signal disappears – or if the wind fades down below 5 - 6 knots.

“Wind HDG” is available in Maneuver CTRL or in DP CTRL.

# EMRI DP FEATURES

The large VDU (21” ... 27”) DP-display application either in the Navigation System Supplier’s computer or in an EMRI delivered computer.  
The display may be shared with other navigation tasks.

Each VDU picture is designed to the actual ship’s maneuver-devices.



BC: MAN Manual HDG

HDG 14.5°

Turn Order 15%

ROT 7.5°/min

SOG,X 3.5 kn

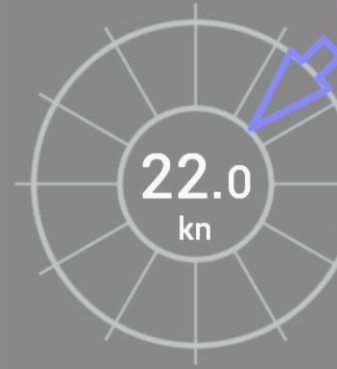
SOG,Y 0.5 kn

DBK 31.5 m

BC: DP Auto HDG

HDG 14.5°

HTS 15.0°



BC: DP Wind HDG

HDG 14.5°

HTW 43.2°



“CONNING” Display  
Maneuver CTRL  
Manual HDG.  
Turning order shown.

“WIND” Display  
DP CTRL,  
Auto HDG.  
Blue arrow= Relative wind.

“WIND” Display  
DP CTRL,  
Wind HDG.  
HTS is now= HTW.

# TOOLS & TRAINING

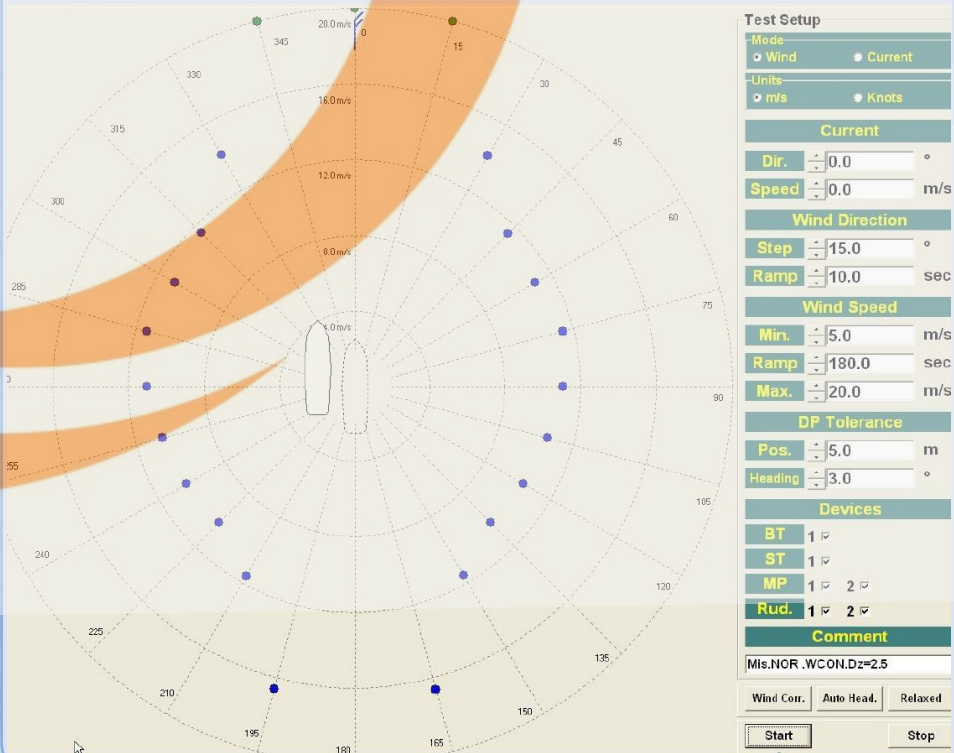
“PINK TEST”  
Onboard training with a built-in computer-model of the ship.

Remote upgrading and service over a secure internet connection is possible all it requires is a Laptop, an ethernet cable and a trained ETO.

Continuous logging of machine interface and navigation data.

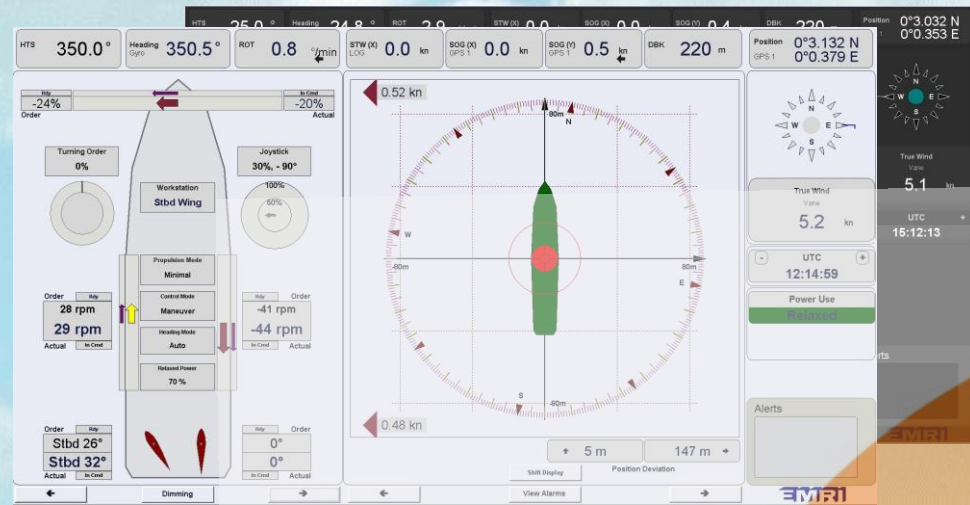
# CAPABILITY PLOTS

All EMRI’s DP-systems are preceded by a series of “Capability Plots”. This is a polar diagram of the ship & DP-system’s ability to resist wind and current.  
EMRI’s capability plots are computer simulations, examining the delivered control system’s performance. This Wind capability plot illustrates that the ship and its DP-system can resist up to 11 m/sec wind from the sides before it loses position.  
The Green dots at +/- 15 deg predicts that more than 20 m/sec can be taken from ahead.

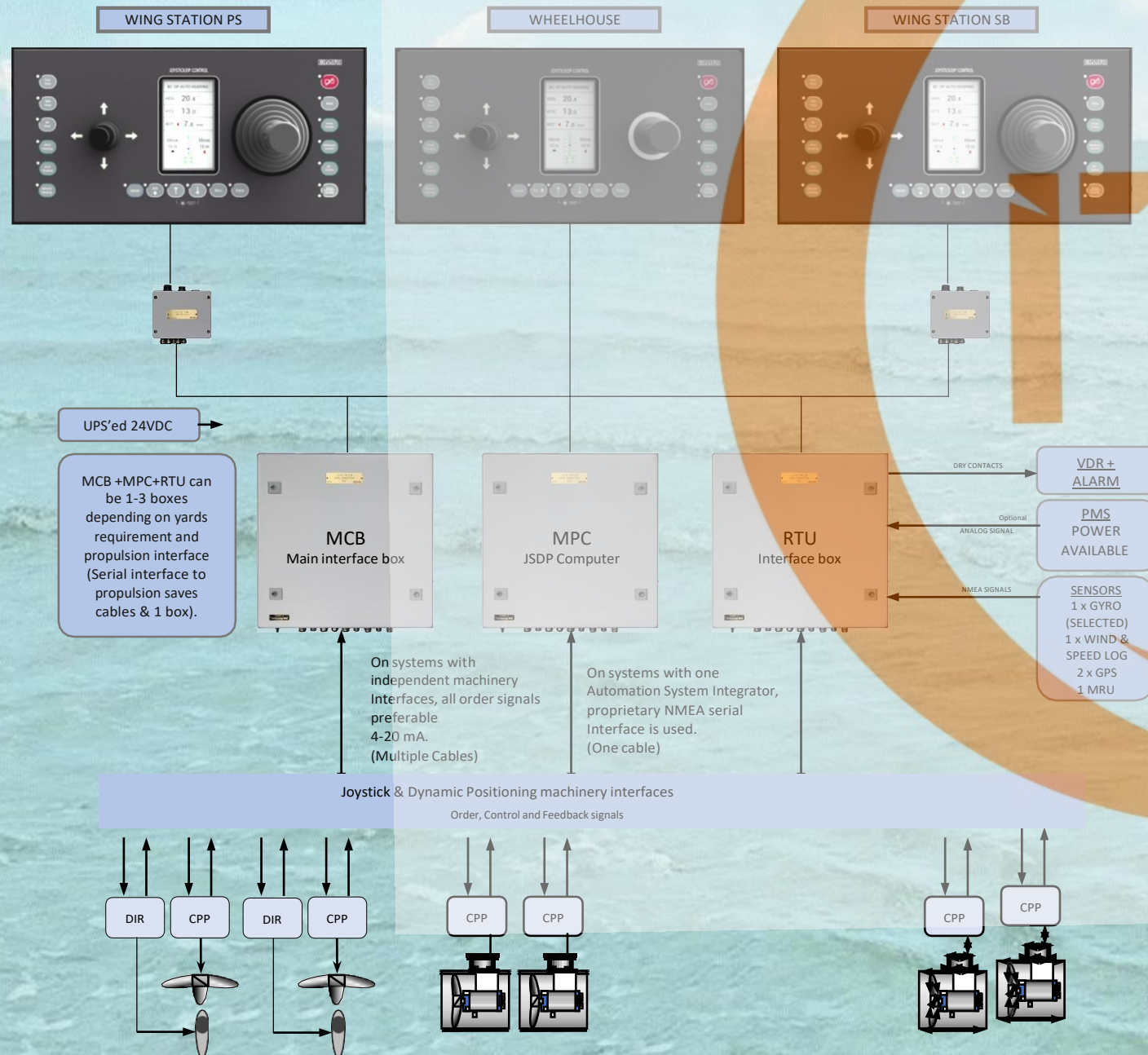




## BLOCK DIAGRAM



EMRI's display software running on either Panel PC, Navigation PC or EMRI PC with KVM Switch.  
Multiple palettes.



Main propellers must be able to apply thrust bump less through zero thrust

## PANEL OPTIONS

The new design offers different panels for different users. The simplest of panels is operated by a joystick and a tiller. More complex panels can have a Mini Wheel for turning power or steering control, or an Azimuth lever if that is desired. The panels are designed so they can be used to upgrade old systems to improve the HMI with minimum change to how the system is operated.

## PANEL INTEGRATION

Levers, display and push buttons can be delivered as loose items to be built into yard or owner specific console layouts.

## LEVER OPTIONS

Levers from various makers can be used to fulfill special design needs if the electrical interface is approved. Panels can be designed with El-shaft controlled levers in the system.

## PUSH BUTTON OPTION

Special push button design may be developed to fit a uniform bridge design.

## PORTABLE OPTION

The portable panel is hooked on bulkhead or railing mounted hooks. The panel can be stowed away, when not used.

