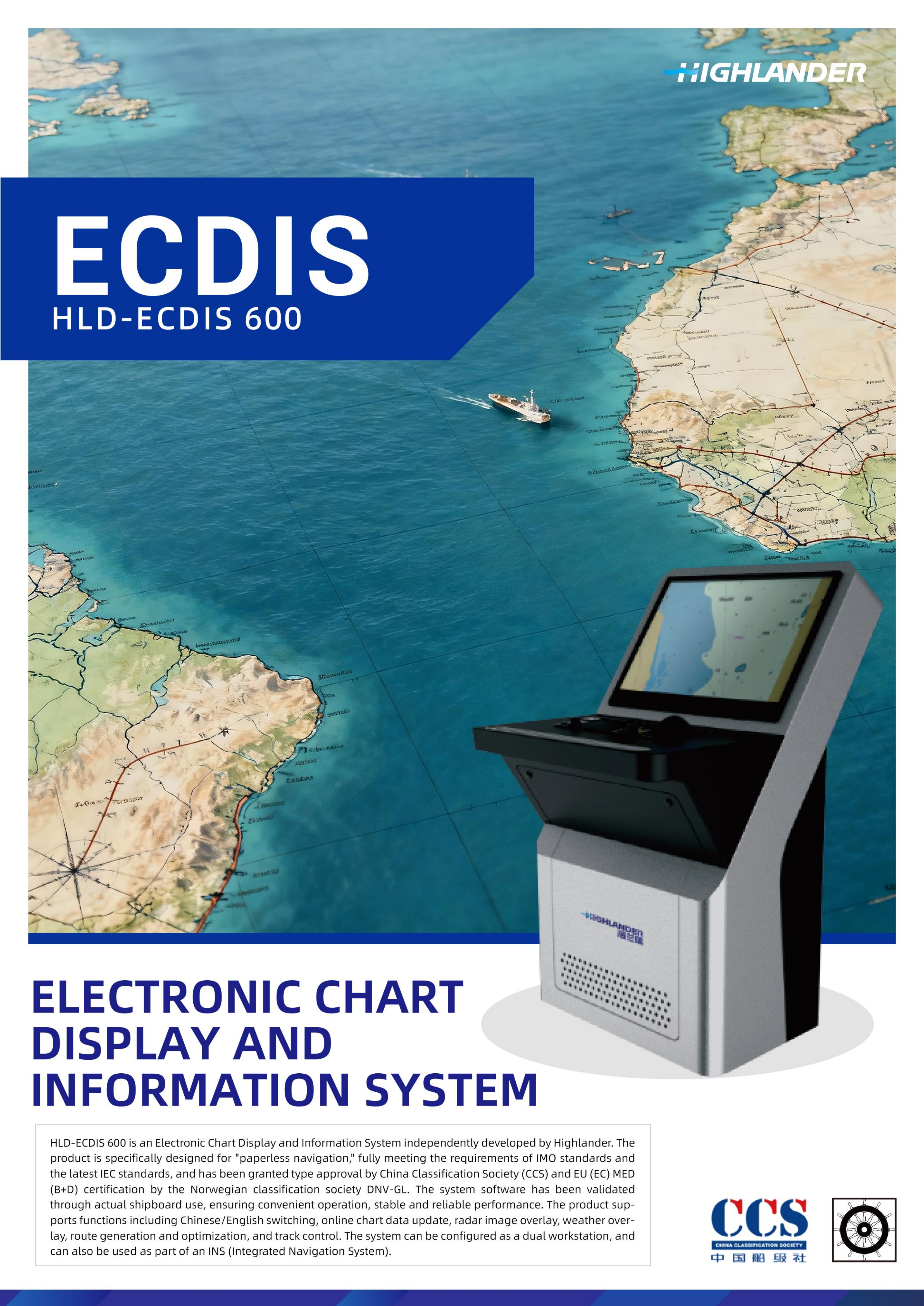




HIGHLANDER

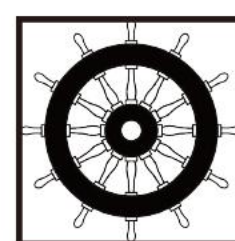
ECDIS

HLD-ECDIS 600



ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEM

HLD-ECDIS 600 is an Electronic Chart Display and Information System independently developed by Highlander. The product is specifically designed for "paperless navigation," fully meeting the requirements of IMO standards and the latest IEC standards, and has been granted type approval by China Classification Society (CCS) and EU (EC) MED (B+D) certification by the Norwegian classification society DNV-GL. The system software has been validated through actual shipboard use, ensuring convenient operation, stable and reliable performance. The product supports functions including Chinese/English switching, online chart data update, radar image overlay, weather overlay, route generation and optimization, and track control. The system can be configured as a dual workstation, and can also be used as part of an INS (Integrated Navigation System).



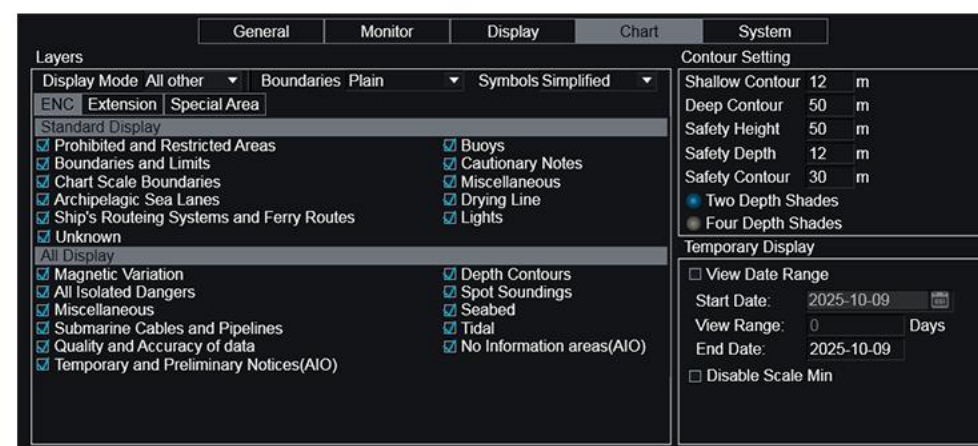
» Features

【Chinese/English switch】

It provides a Chinese/English switch function, and the Chinese interface is more user-friendly and intuitive for Chinese-speaking operators.



Chinese interface



English interface

【Track control】

Track Control is available by connecting to Highlander's Steering Control System so that the sailor can focus on other tasks instead of frequent rudder adjustment.

【ENC update on line】

ENC updates can be implemented not only locally, but also online, by using the chart software client installed on board, remotely accessing the database server, and downloading chart data to complete updates.

【Radar image and ARPA overlay】

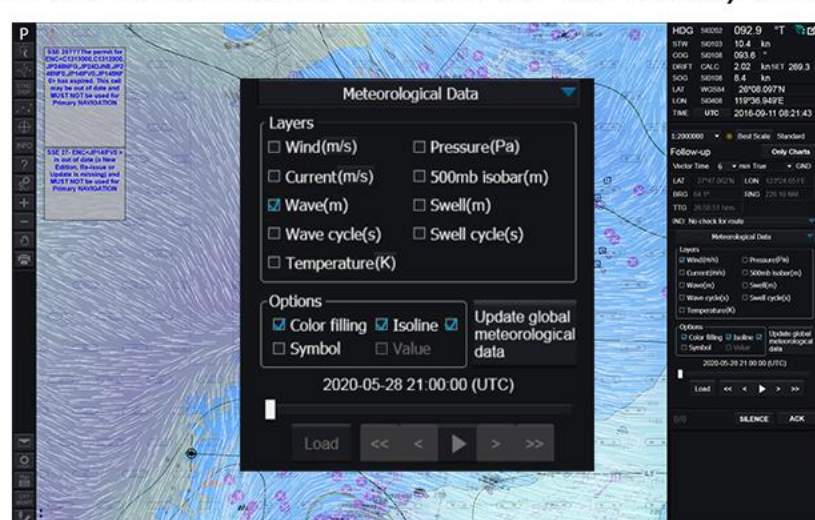
Highlander Radar overlay is supplied directly via LAN. For other manufacturers' radar, an Extractor Radar Acquisition PCI Board adapter is needed for echo overlay, and ARPA targets can be displayed on charts based on TTD or TTM sentences.

【Weather routing】

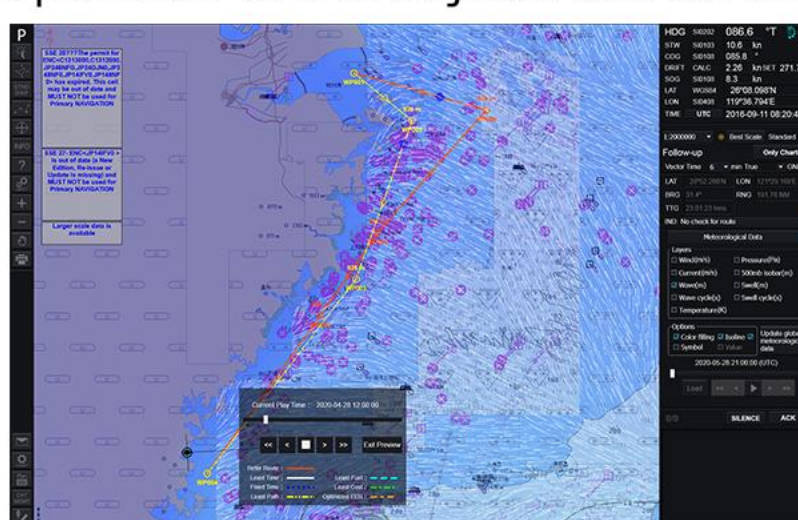
It provides loading and display of weather data such as wind, waves, and ocean currents. Route generation based on the departure port and destination, and route optimization based on weather data and optimization index (shortest time, shortest distance, or lowest energy consumption), and can supply the weather forecast data of China and France to the shipowner, to assist the navigator in making navigational decisions.

【NAVTEX management】

It receives and displays NAVTEX messages, and some filter criteria are available. For certain special NAVTEX messages, such as restricted areas or wrecks, the exact position of the objects will be drawn on the charts.



Weather routing



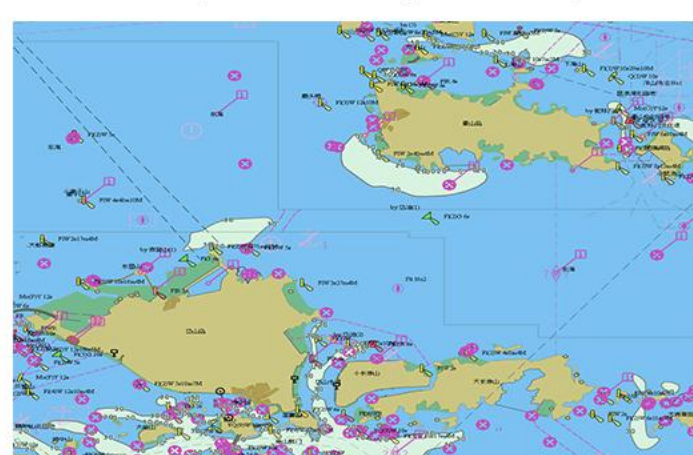
Route optimization



Radar overlay

【Chart data display】

It supports IHO S-57, S-63 formats of electronic chart and supports Mercator Projection and Polar Stereographic Projection, meeting the display requirements for polar navigation areas at high latitudes above 85°. It can supply the ENC data of UKHO AVCS, PRIMAR, CNHO, China MSA, China CWB (Yangtze River), etc. to the shipowner, with global data coverage.



Mercator projection



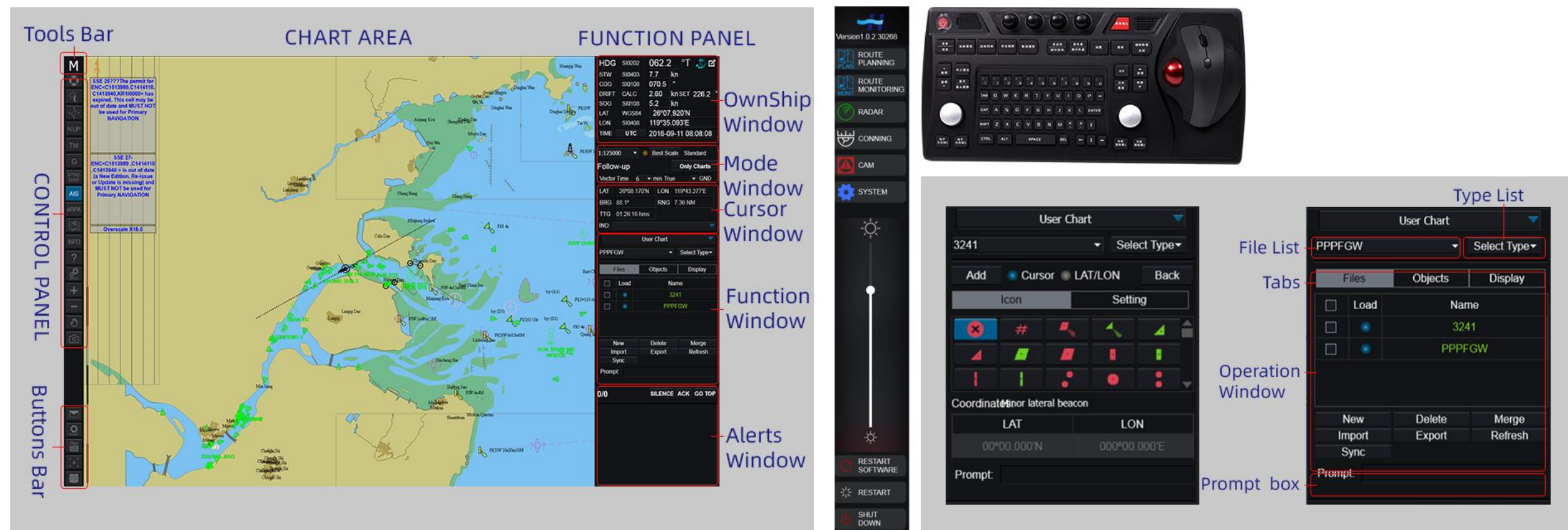
Polar projection



Chart data source

[Friendly interface]

The system features a left sidebar with centralized operation keys and information bar, easily recognizable graphical operation buttons, one-click operation, concise task windows, and an auto-hide control panel in the top-right corner, making the system easy to learn and use.



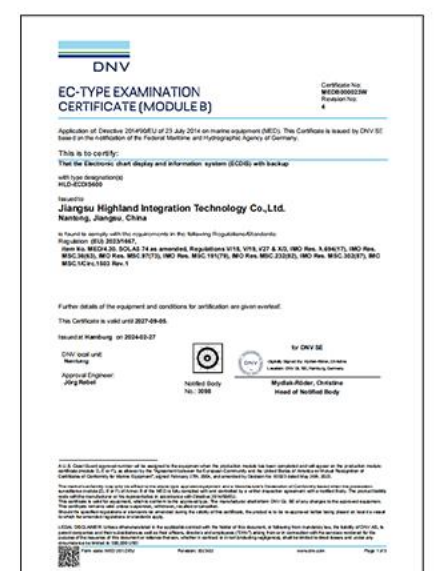
[Comprehensive training system]

To meet the requirements of the latest STCW convention, training is available at Highlander offices and authorized engineering agencies, and can also be conducted at the shipowner's authorized training center, or via Highlander's online education system (<http://ecdis600.highlander.com.cn/>).

» Functions

[Basic functions]

- **Chart Display:** Charts can be displayed in "North-up" or "Head-up" orientation; chart scale can be adjusted as needed; chart information is displayed in layers.
- **Chart Work:** Plan route design on electronic charts; calculate the distance and bearing between any two points; plot ship position, track, etc.
- **Chart Correction:** Receives official correction data provided by official chart production authorities, as well as correction data extracted by navigators from Notices to Mariners on paper charts or radio navigational warnings,
- **Position Fix & Navigation:** Receives information from various navigation sensors in real time and processes it comprehensively to obtain optimal ship position, track, heading, and speed, and performs various landmark position fixing calculations.
- **Voyage Information Query:** Obtains descriptive information of objects on the electronic chart as well as navigation condition information along the route, such as tides, currents, and weather.
- **Radar Image Overlay:** On the color display, radar images are overlaid on the electronic chart as background for navigation and collision avoidance purposes. ECDIS can provide the positional relationship among own ship, static targets, and dynamic targets in the vicinity. Navigators can use this to assess collision situations, make collision avoidance decisions, and verify the feasibility of such decisions on the electronic chart.
- **Route Monitoring:** During navigation, automatically calculates the deviation between the ship's current state and the planned route, alerting when necessary; automatically detects dangerous sea areas, reefs, restricted areas, and shallow waters ahead, to achieve collision avoidance and prevent grounding.



[Specific functions]

- LOP (Line of Position) mouse drawing and one-click recovery function
- BACK UP: master-slave ECDIS mutual backup functionality
- MSI Maritime Safety Information management and overlay functions (NAVTEX/EGC)
- TCS track control (Optional)
- Conning integrated navigation information display system (Optional)
- RDS route decision support (Optional)

» Parameter

[System Technical parameter]

- **Product standards:** IMO MSC.232(82):2006, IEC 61174:2015
- **Display Unit:** A total of 3 models available, ranging from 19 inch to 27 inch.
- **Operating system:** Windows 7 (EN)
- **Interface**
Input: Serial or LAN – Own ship sensor data / ENC / PERMIT / CERTIFICATE / Charts UPDATE / External alerts
Output: Serial or LAN – VDR / INS interface / TCS interface / BAMs
- **Power supply:** 115–230 VAC and 24 VDC input, 300 W
- **UPS:**115–230 VAC input, 1 kVA
- **Working environment:**IEC 60945 standards
- **Temperature:**–15 °C to +55 °C

[Process Unit]

- **Processor:** Intel® Core™
- **Internal storage:** DDR3, 8 GB
- **Storage:** SSD 250 GB
- **Size (L × W × H):** HLD-MCU770: 293 × 194 × 160 mm
- **Operating temperature:** –15~55 °C
- **Storage temperature:** –20~60 °C
- **Power:** 18~36 VDC input
- **Power dissipation:** <100 W
- **Compliant with:** IEC 60945
- **Weight (about):** HLD-MCU770: 5.6 kg

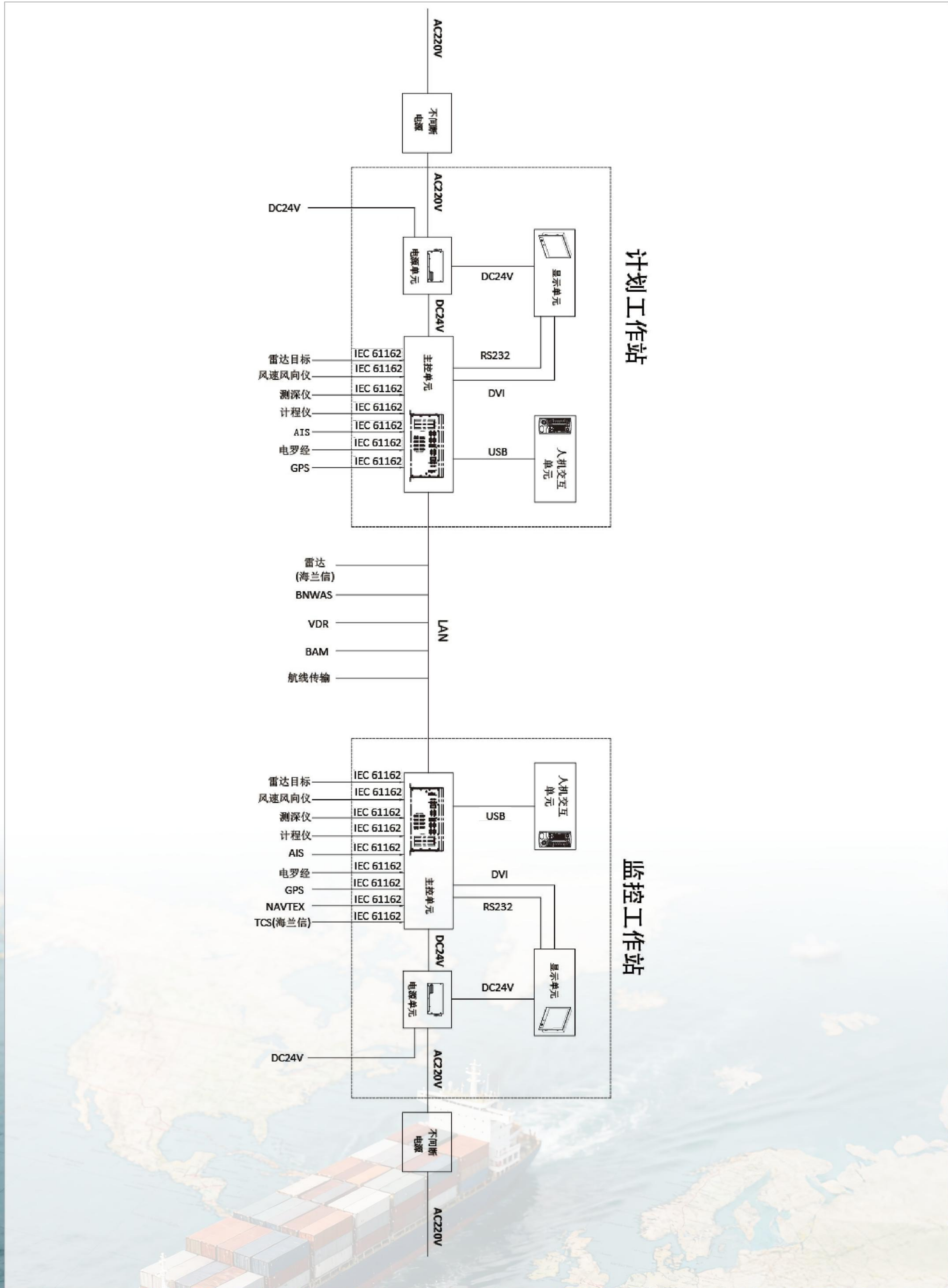
[Human Interface Unit]

- **Installation:** Desk mount / Embedded mount
- **Weight (about):** 2.5 kg
- **EMC/EMI:** IEC 60945

[Display Unit Technical parameter]

Model		HLD-DU163	HLD-DU165	HLD-DU134	HLD-DU138
Type Approval		CCS	CCS	DNV-GL	DNV-GL
Display Unit	Size	24"	27"	24"	27"
	Resolution	1920×1080	1920x1080	1920×1080	1920×1080
	Dimension	593x384x69.5	429×382×74.5	593×384×70	650×437×69.5
	Weight(kg)	10.35	7.8	9.1	11
Signal Input		DVI-I/VGA			
Environment	Temperature	-15~55℃			
	Relative Humidity	10%~90%		0~95%	
	IP	IP22			
Power Supply		115 & 230V AC and 24V DC			

Configuration



Standard Configuration		Optional	
1	Main Control Unit HLD-MCU 770	1	Qin Desktop Stand HLD-SM 200
2	Display Unit (24") HLD-DU 134	2	Desk Bracket HLD-DM 200
3	Interactive Unit HLD-IU 600	3	Serial data Service HLD-SPS 100
4	Chart Software and Dongle ECDIS 600(M)	4	Display Unit HLD-DU162 19" HLD-DU163 24" HLD-DU165 27" HLD-DU134 24" HLD-DU138 27"
5	Documents	5	U disk with chart Data
6	Power Supply Unit HLD-PCU 600	6	VDR interface (only HLD-VDR 600 no need)
7	Chart data:USB drive	7	UPS Power
		8	Radar image card
		9	TCS interface
		10	Network switch and network cables

» Dimensional Drawings

[Display Unit HLD-DU163 24"] 8.7kg	[Display Unit 24" HLD-DU165 27"] 9.8kg
[Display Unit HLD-DU134 24"] 10.7kg	[Display Unit HLD-DU138 27"] 11kg
[Human Interface Unit HLD-IU600] 1.0kg	[Process Unit HLD-MCU770] 5.6kg



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