

## GENERAL SPECIFICATION

1. Display Screen  
Smart 4 : 4.3 inch color LCD with LED backlight  
Smart 5 : 5 inch color LCD with LED backlight
2. Resolution  
Smart 4 : WQVGA (480 X 272 pixels)  
Smart 5 : WVGA (800 X 480 pixels)
3. Power Supply  
DC 12V~36V(±10%)  
Smart 4 : 4W(HD-43C)/ 6W(HD-43F/CF)  
Smart 5 : 5W(HD-50C)/ 7W(HD-50F/CF)
4. Operating Temperature  
Display Unit -15°C~+50°C  
Antenna Unit -25°C~+70°C
5. Performance Standard  
IMO Resolution MSC.112(73)
6. Option  
MicroSD, Exteral GPS Antena, Tranducer

## GPS RECEIVER SPECIFICATION

1. GNSS Receiver Capabilities  
GPS L1 C/A code  
GLONASS L1OF/  
QZSS L1 C/A code  
Galileo E1B/E1C/L1
2. Number of Channel  
52 channels
3. Horizontal Positioning Accuracy  
Autonomous 2.5m (CEP 50%)
4. Sensitivity  
Acquisition -148 dBm  
Tracking -165 dBm  
Reacquisition -162 dBm
5. Nav Update  
1Hz, 5Hz
6. Support  
DGPS, SBAS(EGNOS, WAAS, MASA, GAGAN)

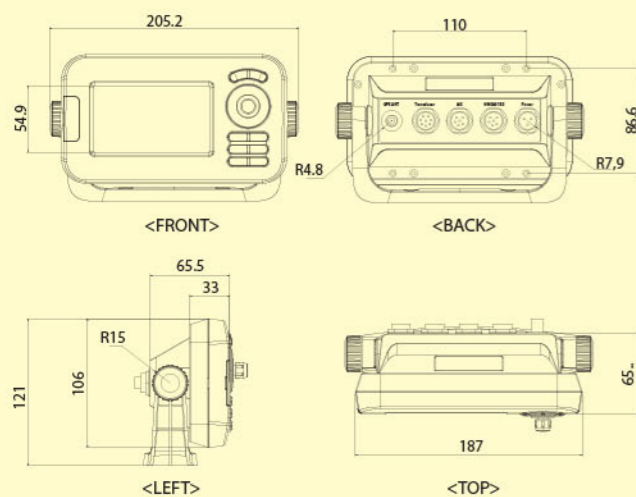
## CHARTPLOTTER SPECIFICATION

1. Display Method Mercado Projection
2. Display Mode  
True motion / N/S/E/W up / Course up / Head up
3. Latitude Limits Between 85° N to 85° S
4. Map Scale 0.05nm to 1500nm
5. Map Datum WGS-84
6. Waypoint 20,000 points  
\*Total of 16 colors and 16 icons are selectable each point with name tag (8 alphanumeric characters)
7. Track Point 50,000 points( 2 types)
8. Route Max capacity 100 Routes  
\*20 WPTs per each Route. Each with name tags (8 alphanumeric characters)
9. Draw Point 1,000 points
10. Area Name 1,000 points
11. Chart Data HY-MAP(Built-in or External)/ C-MAP/ Navionics
12. Output Data NMEA-0183
13. Input Data NMEA-0183
14. Alarm Arrival, Anchor, XTE, Interval timer, Userline

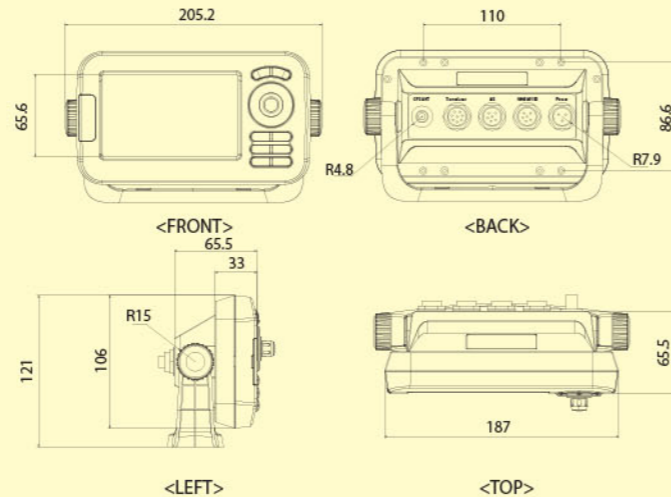
## FISHFINDER SPECIFICATION

1. Display Mode  
Normal (single/dual-frequency), Bottom-lock, Bottom-zoom, A-scope
2. Frequency  
50 and 200 KHz (single or dual)
3. Output Power  
300W/ 600W
4. Range speed  
300W : 2.5m ~ 300m  
600W : 2.5m ~ 600m
5. Image speed  
Fixed 8 speeds (4/1, 2/1, 1/1, 1/2, 1/4, 1/8, 1/16, 1/32) and stop
6. Rejection  
Interferencs rejection: 3 levels  
Noise rejection: 4 levels
7. Function  
Gain(auto/manual), Range(auto/manual), Shift(auto/manual), White/Black line  
Support speed sensor, Water temperature

### Dimension(Smart 4)



### Dimension(Smart 5)



\*SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

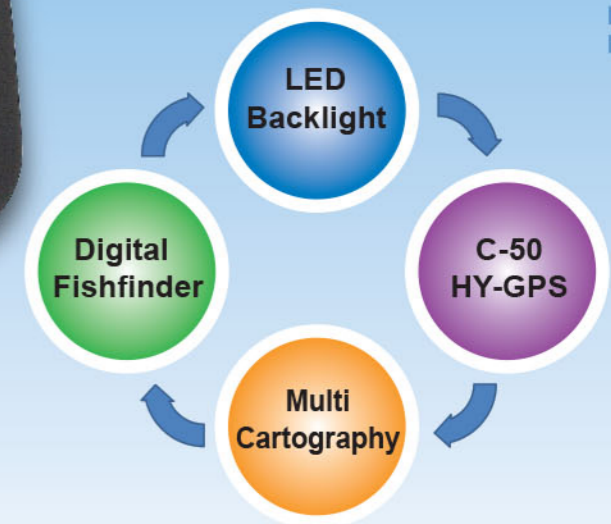
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# Move to the future!

## New Smart series





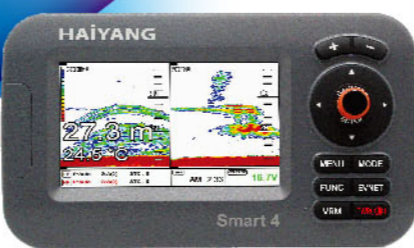
**HD-43CF**  
(Combo)



**HD-50CF**  
(Combo)



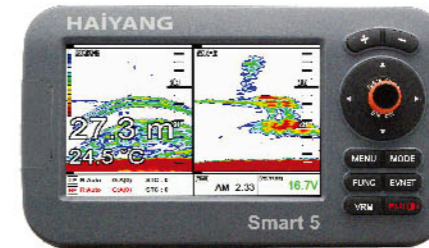
**HD-43C**  
(Standalone Chartplotter)



**HD-43F**  
(Standalone Fishfinder)



**HD-50C**  
(Standalone Chartplotter)



**HD-50F**  
(Standalone Fishfinder)

**CHARTPLOTTER SPECIFICATION**

- LED Backlight Display**  
Wide color LED Backlight Display is ultra bright for the optimum viewing under direct sunlight.
- Windows OS**  
Easy operation with Turbo keys on Windows.
- Internal GPS ANT standard**  
New Haiyang's internal GPS ANT, accuracy of the position. Real-time head-moving is available.  
- DGPS  
- SBAS(WAAS, etc.)
- Outdoor use**  
Water/Dust resistant protect against dust, rain or wave in rough condition.
- Three Chart Systems**  
Three chart systems C-MAP(SD)/HY Chart(Inter/Exter) are available. The most suitable chart is chosen by the user. Lots of information such as buoys, lighthouses, wrecks and tides are provided.
- Multi-language**  
Selection of languages, Korean, English, Italian, Spanish, Chinese, Taiwanese, Vietnamese, Arabic, Thai, Greek, Turkish, Malay, Indonesian, Aarbic, Indian(Hindi, Gujarati) Persian etc.
- Micro SD support**  
Micro SD card memory available to store user data(WPT, mark, track, etc) or upgrade new S/W and chart.
- Various AIS information**  
When connecting AIS, sorting MMSI, Ship's name, nationality, CPA, etc available. Additionally, easy measuring the distance of other ships available with AIS radius.

**FISHFINDER SPECIFICATION**

**Concepts of analog signal and digital signals**

Magnitude of signal  
Time

**Analog signals**

Quantization  
Magnitude of signal  
Time

Sampling

**Digital signals**

In analog FF, the continuous analog signals provide so that there is a limit to filter the noise. For example, in case of 200KHz, analog FF receives data between 180KHz to 220KHz but digital FF can provide the pure 200KHz data only through "Digital Filter" in CPU, which provides the pure data of only 200KHz. Hence, the digital image is the optimum clean and analysis is brilliant.

**Analog Fishfinder**

```

graph LR
    TD[TD Transducer] --> TP[Transmitting part]
    TD --> RC[Receiving circuit]
    RC --> AF[Analog filter]
    AF --> CPU[CPU]
    CPU --> S[Screen]
            
```

**Digital fishfinder**

```

graph LR
    TD[TD Transducer] --> TP[Transmitting part]
    TD --> RC[Receiving circuit X]
    RC --> AF[Analog filter X]
    AF --> CPU[CPU Digital filter]
    CPU --> S[Screen]
            
```

Adjustment is not required!