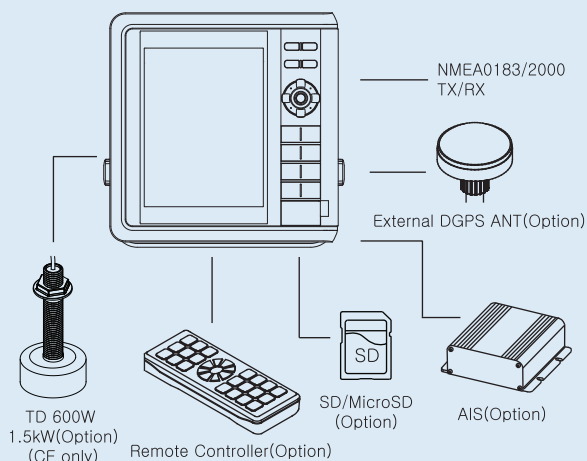


| VG-10 Series Spec     |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|-----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                       | VG-10C                                                                            | VG-10CF                                                                           | VG-10CA                                                                           | VG-10CFA                                                                           |
|                       |  |  |  |  |
| Display               | 10.4 inch color LCD(LED backlight)                                                |                                                                                   |                                                                                   |                                                                                    |
| Resolution            | 800 X 600 pixels(SVGA)                                                            |                                                                                   |                                                                                   |                                                                                    |
| Power supply          | DC 12V ~ 36V (±10%)                                                               |                                                                                   |                                                                                   |                                                                                    |
| Power consumption     | 12W                                                                               | 17W                                                                               | 13W                                                                               | 18W                                                                                |
| Operating Temperature | -15℃ ~ +50℃                                                                       |                                                                                   |                                                                                   |                                                                                    |
| GPS                   | O                                                                                 | O                                                                                 | O                                                                                 | O                                                                                  |
| Fishfinder            | X                                                                                 | Digital fishfinder V 3.X                                                          | X                                                                                 | Digital fishfinder V 3.X                                                           |
| Internal AIS class B  | X                                                                                 | X                                                                                 | O                                                                                 | O                                                                                  |
| Map                   | HY-MAP /C-MAP 4D                                                                  |                                                                                   |                                                                                   |                                                                                    |
| Wi-Fi                 | O                                                                                 | O                                                                                 | O                                                                                 | O                                                                                  |
| Bluetooth             | O                                                                                 | O                                                                                 | O                                                                                 | O                                                                                  |
| NMEA 0183             | O                                                                                 | O                                                                                 | O                                                                                 | O                                                                                  |
| NMEA 2000             | O                                                                                 | O                                                                                 | O                                                                                 | O                                                                                  |
| RF remote controller  | O                                                                                 | O                                                                                 | O                                                                                 | O                                                                                  |
| GA-88                 | O                                                                                 | O                                                                                 | O                                                                                 | O                                                                                  |
| SS502(600W)           | X                                                                                 | O                                                                                 | X                                                                                 | O                                                                                  |
| SS422(1.5kW)          | X                                                                                 | O                                                                                 | X                                                                                 | O                                                                                  |
| WPT                   | 100,000 points                                                                    |                                                                                   |                                                                                   |                                                                                    |
| Track                 | type 1/2<br>(each 50,000 points)                                                  |                                                                                   |                                                                                   |                                                                                    |
| External monitor      | O                                                                                 | O                                                                                 | O                                                                                 | O                                                                                  |

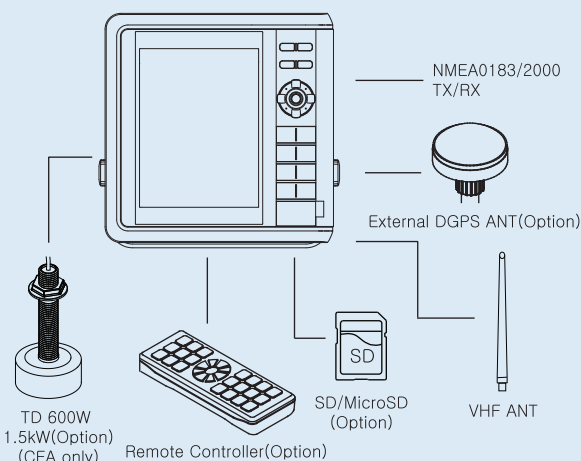
(\*External monitor will be supported later.)

#### Interconnection

##### Chartplotter / Chartplotter Fishfinder



##### Cartplotter AIS / Chartplotter Fishfinder AIS



ⓘ This specification may be changed without notice.

#### GPS CHARTPLOTTER SPECIFICATION

1. Display Method Mercator 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 1,500NM
5. Map Datum WGS-84
6. Waypoint 100,000 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 4D
12. Output Data NMEA-0183
13. Input Data NMEA-0183
14. Alarm Arrival, Anchor, XTE, Interval timer, Userline

#### AIS SPECIFICATION (CA, CFA model)

1. AIS standards IEC62287-1 Ed3  
ITU-R M.137-5
2. Frequency 156.025MHz to 162.025MHz
3. Transmitter X 1
4. Receiver X 2
5. Channel Spacing 25kHz
6. Frequency stability rate ±10PPM(-20℃ ~ +60℃)  
107dBm (Message error rate : 20%)
7. Sensitivity
8. Output power 2W or 5W
9. Demodulation GMSK
10. Connector VHF ANT (PL-259)  
GPS ANT (BNC)

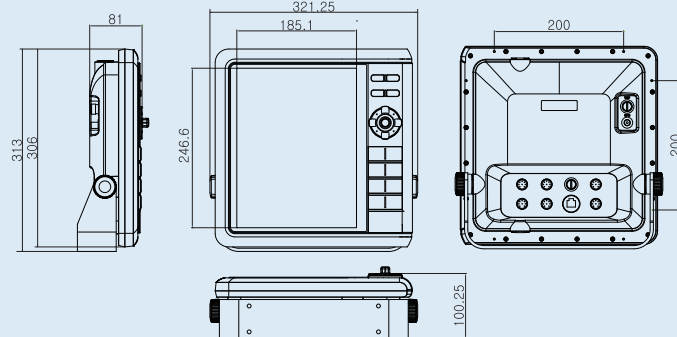
#### FISHFINDER SPECIFICATION (CF, CFA model)

1. Display Mode Normal (single/dual-frequency), Bottom-lock, Bottom-zoom, A-scope
2. Frequency Fishfinder 50 kHz and 200 kHz
3. Output Power 600W/ 1.5kW
4. Range 600W 2.5m ~ 600m  
1.5kW 2.5m ~ 1,500m
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 Interference rejection 3 levels  
Noise rejection 30 levels
7. Function Gain(auto/manual), Range(auto/manual), Shift(auto/manual), White/Black line, Shift, Water temperature, Time machine, Contrast, Support speed sensor

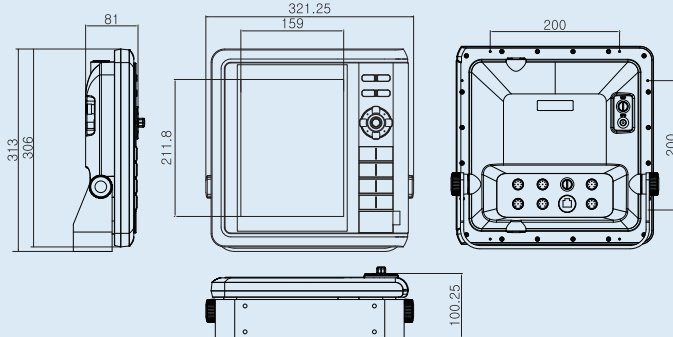
#### GPS RECEIVER SPECIFICATION

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, 4Hz
6. Support DGPS  
SBAS(EGNOS, WAAS, MASA, GAGAN, GLONASS)

#### Dimension(VG-12)



#### Dimension(VG-10)



#### Certified to ISO 9001/2000

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# VEGA



## Rotation *Providing the Hidden Part*

### Hybrid Touch Model



Father with rotating vertically



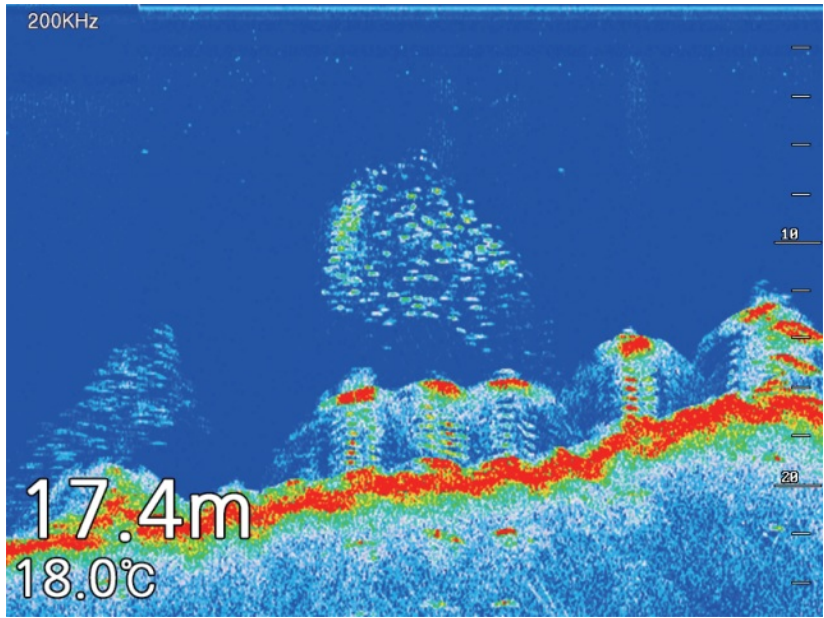
### VG-10 series

Wider with rotating horizontally



### VG-12 series

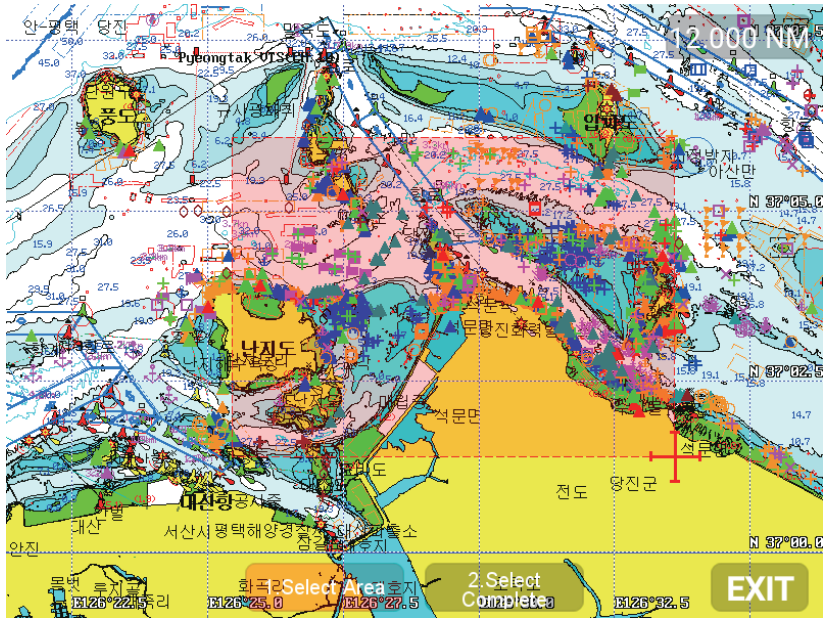
# HAİYANG



### Digital Fishfinder V 3.0

Vega new digital fishfinder technology V 3.0 upgraded from V 2.0 provides more advanced analysis and performance.

- Upgraded to true colors of 256(V 2.0 provided 16 colors)
- AI noise filtering
- Faster time machine functionality



### Selected Area Erase/Store

Users can select areas and user data such as mark(symbol/color) and track(color) in the area is able to erase or store.

### Other Functions

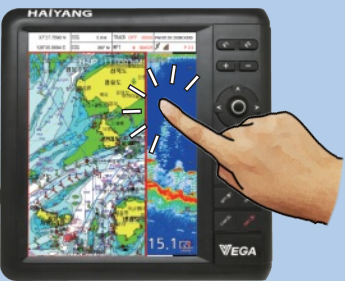
EPTP(Erase particular part of tracks)

User can erase the particular part of the tracks. Previously, user erased the total tracks only.

### Max. mark 100,000 points

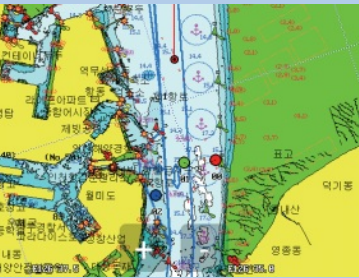
Max. 100,000 points of mark is supporting, which is the biggest mark number in any other chartplotters.

Supporting RF wireless RC / C-MAP 4D / Micro SD & normal SD



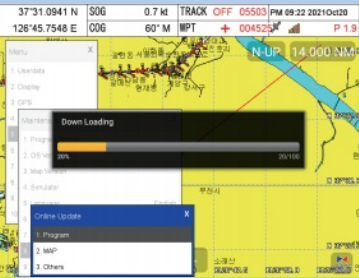
### Hybrid Touch System

Users can use not only key buttons but also multi-touch screen for operating zoom-in/out, map scroll, inputting marks and erasing tracks, which provides quicker and more convenient operation.



### Alpha Radar Target Chasing

When Vega is connecting alpha radar, it's sharing the radar target data and showing the radar target position and the boating route on the Vega screen.



### Online Update

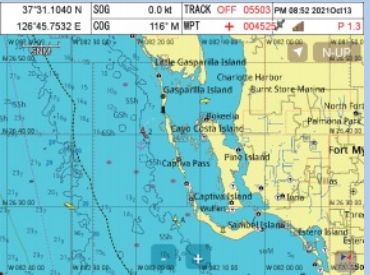
As long as internet service(ex: Wi-Fi or mobile hotspot) is providing, Vega can connect to Haiyang's server and online downloading the latest S/W, map, etc in real time.



### Distance&BRG Calculation

User can calculate the distance and BRG between the appointed start point and end. Also, user can divides distances between the start and end.

### C-MAP 4D Features



### FFVC With Tides&Current

FFVC(Full Featured Vector Charts) provides easy navigation. Tides & currents show projections of water level and direction of tides to help plan your day out angling or sailing.



### Raster Charts

Raster Charts provide a traditional chart look and feel coupled with easy access to all objects on the charts. \*\*Not available with Continental format.



### 3D View

Stunning three-dimensional views of land elevation and bottom contours bring the world around (and under) your boat to life.



### Pegasus(Android Smart APP)

After user downloads "Pegasus APP" in Google play and connecting Vega through bluetooth, it will provide more convenient operating and controlling Vega.

- Marks storing, loading, editing, looking on the map and combining are available
- Tracks storing, loading and looking on the map are available
- Alarming when new Vega S/W and map updated
- Remote controller supporting
- Digital user manual supporting



### CFM(Commercial Fishing Mode)

CFM provides more convenient commercial fishing such as fishing trap, floating net, long line. CFM activates marking & tracking(start & end) automatically when user clicks the key. Also, CFM also provides the time, distance and BRG from the start point while fishing until ending point.



### Electronic Compass Connecting

When Vega can connect the entire electronic compass's through NMEA0183/2000, it provides quicker heading. Besides, it shows two headings, GPS BRG and compass BRG at the same time, which makes possible with looking the heading direction as well as the current direction on one screen.



### AIS List Alarm

User can appoint the AIS targets with the size and color in the AIS MMSI list. Besides, user can name targets intentionally which have no names.

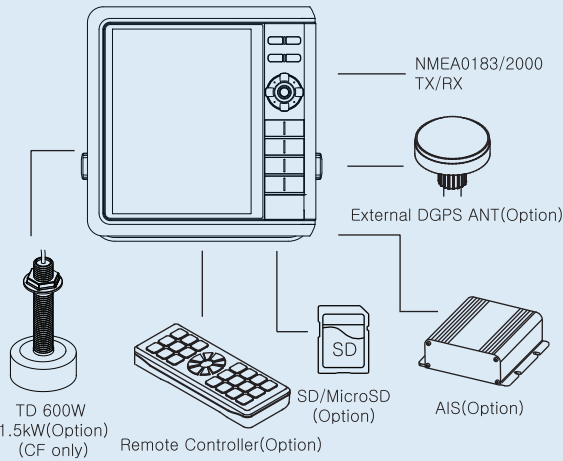
### VG-12 Series Spec

|                       | VG-12C                             | VG-12CF                  | VG-12CA | VG-12CFA                 |
|-----------------------|------------------------------------|--------------------------|---------|--------------------------|
| Display               | 12.1 inch color LCD(LED backlight) |                          |         |                          |
| Resolution            | 800 X 600 pixels(SVGA)             |                          |         |                          |
| Power supply          | DC 12V ~ 36V (±10%)                |                          |         |                          |
| Power consumption     | 13W                                | 18W                      | 14W     | 19W                      |
| Operating Temperature | -15℃ ~ +50℃                        |                          |         |                          |
| GPS                   | O                                  | O                        | O       | O                        |
| Fishfinder            | X                                  | Digital fishfinder V 3.X | X       | Digital fishfinder V 3.X |
| Internal AIS class B  | X                                  | X                        | O       | O                        |
| Map                   | HY-MAP / C-MAP 4D                  |                          |         |                          |
| Wi-Fi                 | O                                  | O                        | O       | O                        |
| Bluetooth             | O                                  | O                        | O       | O                        |
| NMEA 0183             | O                                  | O                        | O       | O                        |
| NMEA 2000             | O                                  | O                        | O       | O                        |
| RF remote controller  | O                                  | O                        | O       | O                        |
| GA-88                 | O                                  | O                        | O       | O                        |
| SS502(600W)           | X                                  | O                        | X       | O                        |
| SS422(1.5KW)          | X                                  | O                        | X       | O                        |
| WPT                   | 100,000 points                     |                          |         |                          |
| Track                 | type 1/2 (each 50,000 points)      |                          |         |                          |
| External monitor      | O                                  | O                        | O       | O                        |

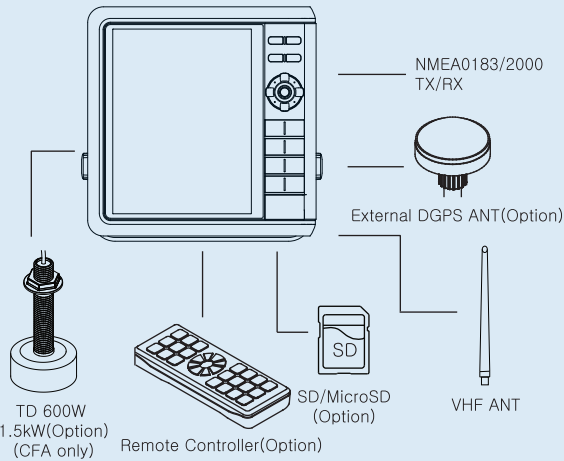
(\*External monitor will be supported later.)

### Interconnection

#### Chartplotter / Chartplotter Fishfinder



#### Cartplotter AIS / Chartplotter Fishfinder AIS



① This specification may be changed without notice.