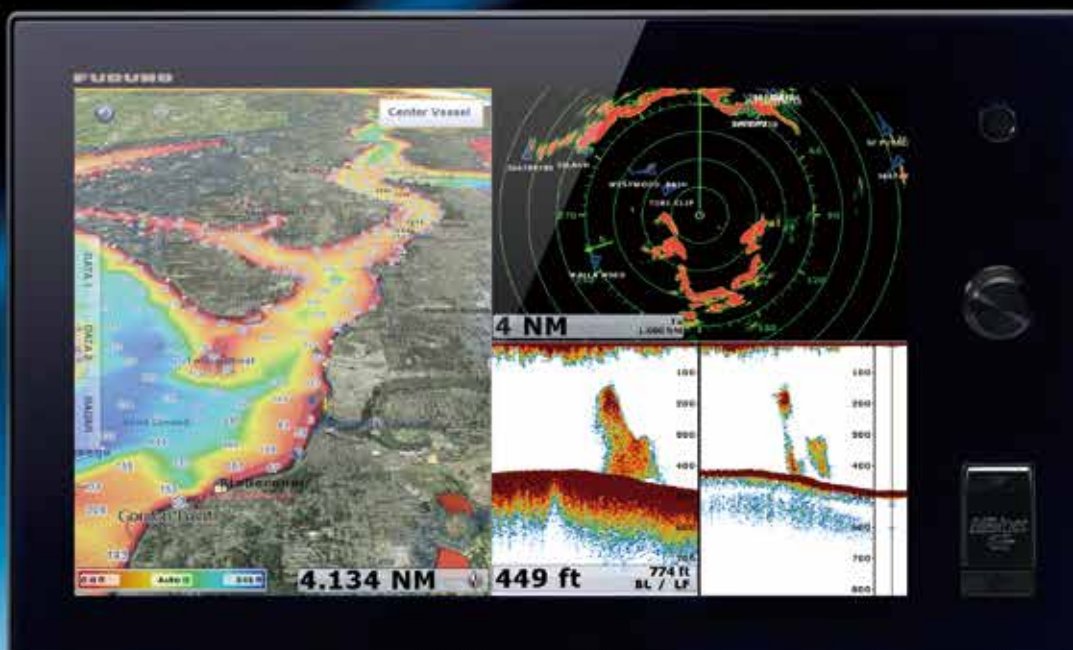


FURUNO

Total Control at your Fingertips

NAVnet

TZ
touch

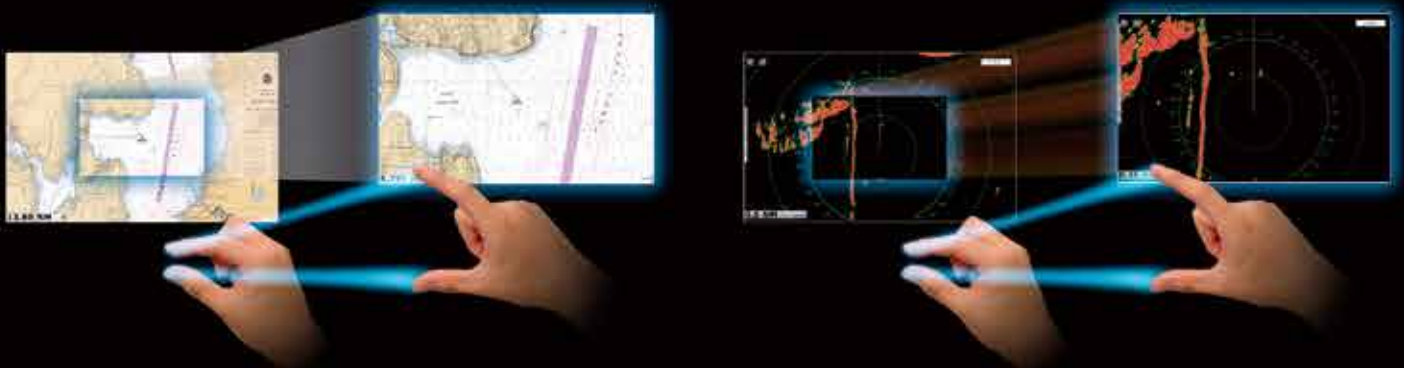




Multi Touch Control · Wireless · TimeZero™ · Digital Revolution

Pinch-To-Zoom

NavNet TZtouch brings you pinch-to-zoom capability, as well as other multi touch gestures for the most intuitive navigation experience.



See Page 7 for details >>>

High Performance Technology Beyond Your Expectations



Tablet & Smartphone Apps

Custom apps allow you to wirelessly view and control TZtouch from iOS and Android™*.



See Page 8 for details >>>

Wireless Hotspot Connectivity

TZtouch has wireless connectivity to hotspots, enabling the ability to download useful updates, such as real-time weather data, via the Internet.



See Page 8 for details >>>

TZtouch Delivers A Huge Step Forward In Touch Screen Technology

Today's NavNet has come a long way from the first multi function display. Take one look and you will see just how far. A generous 9" or 14.1" display with edge-to-edge glass makes for a clean and stylish installation. The LED backlighting pushes light through every pixel on the screen for remarkable brightness. Anti-reflective glass coating is visible under any lighting condition. Configure the displays with a wide variety of sensors to build a navigation suite that meets your individual requirements.

With the NavNet TZtouch, model TZTBB, the display unit is selectable from virtually any size of wide or non-wide monitor supporting multi touch controls.

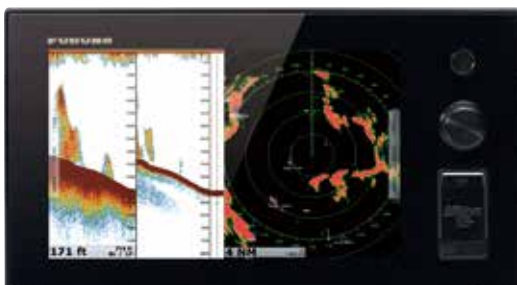
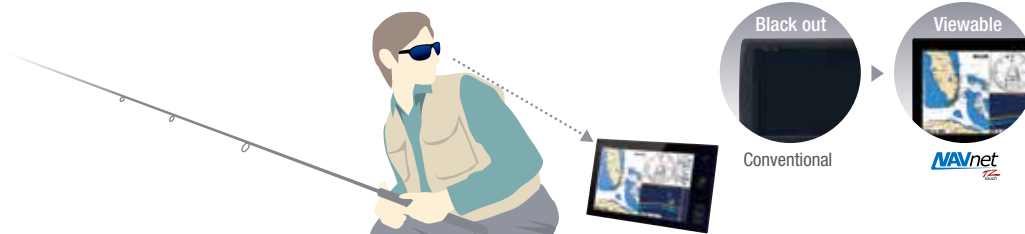
Bonded LCD - Clear Readability

Our bonded LCDs offer a fog-free structural design that has been applied to both the TZT9 and TZT14. This ensures the display will never be affected by water condensation, caused by an air gap between the LCD and the front cover plate.



Polarized Friendly - Clearly Remarkable

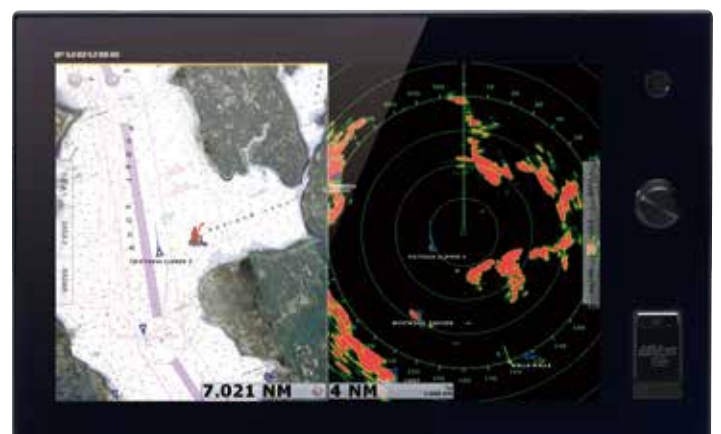
NavNet TZtouch TZT9 and TZT14 have an LCD screen that does not "black out" when wearing polarized sunglasses, providing clear visibility from virtually any angle.



Model **TZT9**

9" Multi Function Display

Resolution: WVGA (800 x 480 pixels)
 Brightness: 900 cd/m² (typical)



Model **TZT14**

14.1" Multi Function Display

Resolution: WXGA (1280 x 800 pixels)
 Brightness: 900 cd/m² (typical)



NEW



Model **MCU-004**



Model **MCU-002**

Remote Control Unit

Take control of your NavNet TZtouch series with a remote controller.

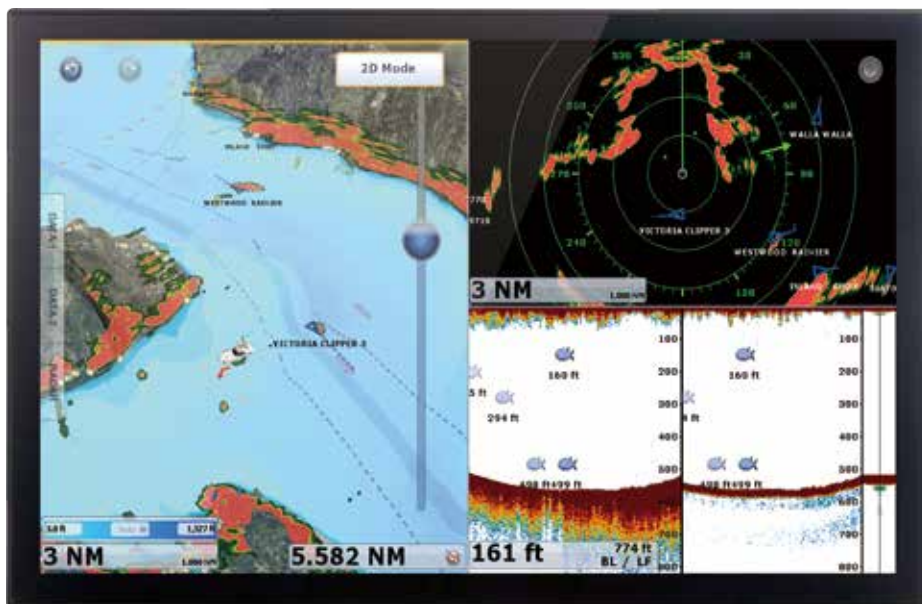


Photo: Multi-touch marine display* with TZTBB processor (model MPU-002)
* Local supply

Model **TZTBB**

Multi Function Display Black Box

Supports both wide and non-wide resolutions:
1280 x 720 (16:9), 1280 x 800 (16:10),
1280 x 960 (4:3), 1280 x 1024 (5:4)

« Ethernet

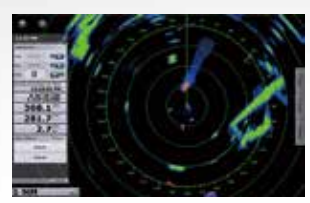


NEW



RADAR

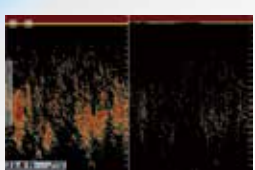
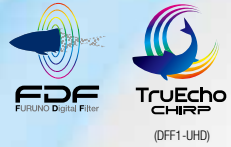
Ultra High Definition Radar Sensors



FISH FINDER



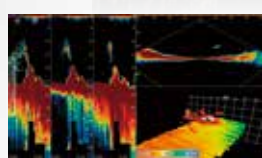
Network Fish Finder
DFF1-UHD/DFF1/DFF3/BBDS1



NEW



Multi Beam Sonar
DFF-3D

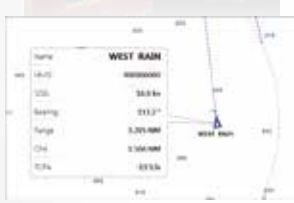


NavNet TZtouch Net

AIS



AIS Receiver
FA-30
Class-B AIS Transponder
FA-50
Class-A AIS Transponder
FA-170



PC



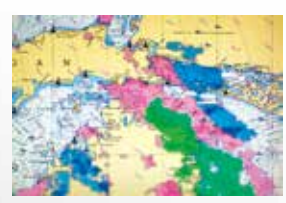
TIMEZERO
Marine Software



CAMERA



IP Camera



SIRIUS



Network Satellite Weather and Radio Receiver
BBWX3

SiriusXM weather coverage is currently available only in U.S. and Canada. Sirius subscription required.



AUDIO



Marine Entertainment System
MS750 Series

CAN bus >>>



GPS



GPS Antenna
GP-330B

GPS Navigator
GP-33



INSTRUMENT



FI-70



AUTOPILOT



NAVipilot-700 Series



COMPASS



Satellite Compass
SC-30



Integrated Heading Sensor
PG-700

REMOTE DISPLAY

SENSORS



Depth/Speed/Temp Sensor
Airmar DST-800



Remote Display
RD-33



NMEA0183 to CAN bus converter available

The optional IF-NMEA2K2 converts NMEA0183 sentences to FURUNO CAN bus PGNs, enabling conventional NMEA0183 navigation devices to be incorporated into the NavNet TZtouch network.

COMPASS

REMOTE DISPLAY

SENSORS

*All stated CAN bus devices can be incorporated into the NMEA2000 network.

The World's Most Advanced Multi Touch Navigation Interface

With NavNet TZtouch's high-sensitivity, touch screen interface, total control is at your fingertips. Navigation is simplified by using your fingers to zoom and pan around the chart. As soon as your fingers touch the display, taps, pinches and swipes are instantly transformed into action. You will learn your controls so quickly that you'll be up and running in no time. To make operation even easier while underway, adjustments such as range and gain are easily made from either the on-screen touch menu or our patented RotoKey™.



Multi Touch Control

Furuno elevates marine touch screen technology to an entirely new level with the industry's first multi touch MFD. The use of multi touch technology opens the door to a wide variety of gesture-based commands.

Touch... and Go Menu Selection

Be more hands-on with our easy-to-understand touch screen interface. You'll have full control of each component connected to the network right at your fingertips.

RotoKey™

NavNet's revolutionary RotoKey™ now merges the power and versatility of touch screen control with an easy-to-use rotary knob. One turn of the RotoKey™ gives you instant access to full control of NavNet TZtouch. For the Blackbox model, the RotoKey™ menu will appear with one tap on the display.



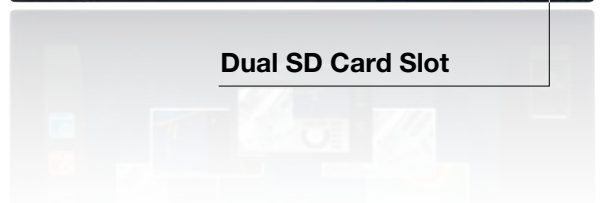
RotoKey™ menu on TZTBB

Home Key

By simply pressing the Home key, you'll gain immediate access to your carousel of customized display configurations. The Home screen is where you can find, select, and custom build the presentation modes you want to display. For TZTBB, Home icon is displayed on the screen.



Dual SD Card Slot



Get Connected With Our Wireless Interface

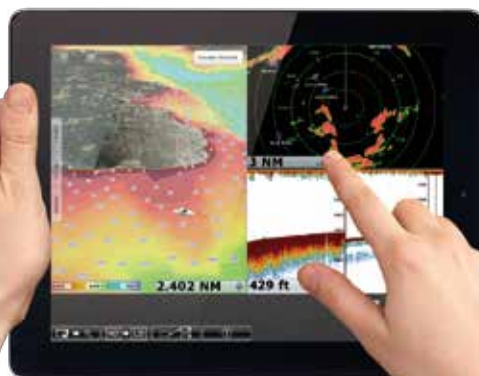
Engineered to utilize the latest technology, NavNet TZtouch opens the door to cutting edge wireless LAN features, such as tablet and smartphone apps, real time weather data, software updates and more.

Visit the Apple App Store to download these FREE apps to view and control NavNet TZtouch.

NavNet Remote App

Take full control of your NavNet in a whole new way. The TZtouch Remote app allows you to operate your system remotely with a smart device wireless LAN, when connected to the network.

NavNet Remote App is available for tablets (more than 7 inches) only.



NavNet Viewer App

Conveniently view information shared wirelessly by the NavNet TZtouch network on your mobile products. As one of the features, you can flick through instrument pages to view key navigational information, such as Depth, Temp, Wind, COG, Fish Finder display and much more.



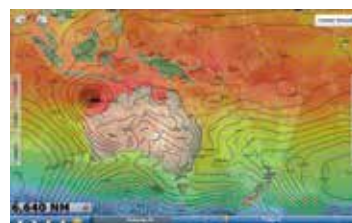
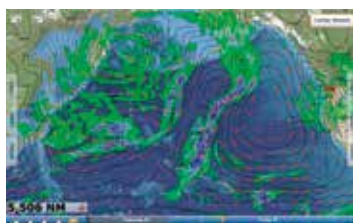
NavNet Controller App

Wirelessly control any NavNet TZtouch MFD with touch controls. With a scroll pad, cursor pad and dedicated keys within the app, controlling NavNet TZtouch is simple and straightforward.



Marine Weather Forecast

The weather tool is completely free and easy to use, giving you unlimited access to weather forecasts worldwide 24 hours a day provided by NavCenter. Select geographic coverage, data type, period of time, and then choose how to receive the file. NavNet TZtouch provides up to 16 days of weather forecasting.





Radar

NavNet TZtouch Radar Sensor Options

Sensor Lineup

	DRS4DL	DRS4D-NXT	DRS6A X-Class	DRS12A X-Class NEW	DRS25A X-Class NEW
Output Power	4 kW	Solid-state, 25 kW	6 kW	12 kW	25 kW
Size	19 inch	24 inch	3.5 ft/4 ft/6 ft	4 ft/6 ft	4 ft/6 ft
Antenna Type	Radome	Radome	Open	Open	Open
Beam Width					
Horizontal	5.2°	3.9°	2.3°/1.9°/1.4°	1.9°/1.4°	1.9°/1.4°
Vertical	25°	25°	22°/22°/22°	22°/22°	22°/22°
Max. Range	36 nm	36 nm	96 nm	96 nm	96 nm
48 rpm Capability	-	✓	✓	✓	✓
Functions	Head-up, North-up*	Head-up, North-up*, Echo Trail, Target Analyzer, Bird mode, Fast Target Tracking, AIS	Head-up, North-up*, Echo Trail, Bird mode, Fast Target Tracking, AIS	Head-up, North-up*, Echo Trail, Bird mode, Fast Target Tracking, AIS	Head-up, North-up*, Echo Trail, Bird mode, Fast Target Tracking, AIS
Dual Range Scanning	-	• (Range is limited to 12 nm)	•	•	•
ARPA	-	•	•	•	•
System version required	4.11	4.21	4.21	5.01	5.01

* Heading input required. ** Not available for 12 V. The radar antenna complies with IEC62252 Ed. 1:2004 (Clauses 4.33, 5.33, Annex D) relevant to radio characteristic. Not available for NavNet 3D.

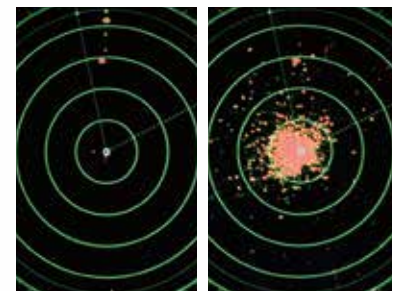
NEW Target Tracking/AIS

Automatic radar plotting utility is one of the standard features of the NavNet TZtouch radar. Up to 30 targets can be simultaneously acquired and tracked for heading and speed. AIS target tracking is accomplished when interfaced with a FA-30/50/170 AIS unit.



Real-Time Digital Auto Gain/Sea Controls

NavNet TZtouch employs revolutionary real-time digital auto Gain/Sea controls to deliver a crystal clear radar presentation. With this new technology, NavNet TZtouch computes and applies an adaptive omni-directional anti-clutter filter with variable intensity according to bearing.

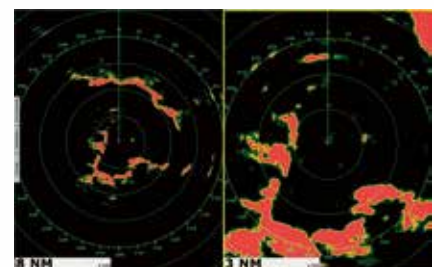


Auto Gain/Sea Controls On

Auto Gain/Sea Controls Off

Real-Time Dual Range Radar Presentation with Dual Progressive Scan

NavNet TZtouch's simultaneous scanning technology allows dual progressive scan to display and update two radar pictures, both long and short range, at the same time as opposed to alternate update methods of typical conventional dual range radar. Autonomous control over gain and anti-clutter can be performed on each radar presentation.



Radar-Chart Overlay

A Radar image can be overlaid onto the chart screen. Not only is this possible with the conventional 2D chart format, but it can also be projected onto a 3D chart presentation. Radar range scales in the radar chart overlay entirely depend on the range scales in the chart presentation, allowing you to view the radar image on the chart information at any magnification level you desire. (An appropriate heading sensor is required.)



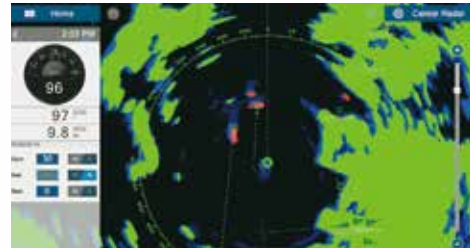
DRS4D-NXT, the NXT step in Radar technology

Solid-State Radar with pulse compression, Target Analyzer and Fast Target Tracking™ utilizing Doppler technology. Combined with FURUNO exclusive RezBoost™ technology for echo sharpening, DRS4D-NXT packs the performance of an open array radar, in a compact 24" radome.

Target Tracking™ automatically show you hazardous targets by displaying them in bright red. Stationary targets are displayed in green.

* TZtouch version 4.21 or later is required.

New Target Analyzer function*



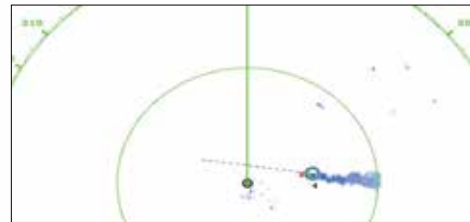
With Target Analyzer, hazardous targets are displayed in red

Fast Target Tracking™

It only takes a few seconds after a target has been selected until a speed and course vector is displayed. With accurate tracking information, estimation of other vessel's course and speed is greatly simplified.

With Fast Target Tracking™ activated, any vessel approaching yours will automatically display a target vector, as well as sound an alarm*. Up to 100 targets can be displayed simultaneously.

*CPA/TCPA alarm setting required.



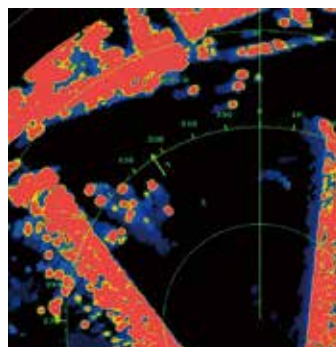
Approaching vessel with target vector

X-Class series a whole new class of Radar

Pushing the boundaries of what is possible with conventional Radar technology, X-Class series mark yet another leap forward for FURUNO. Improved in almost all aspects, X-Class Radar features improved short range detection as well as an impressive long range detection of up to 96 nautical miles. And that's not all, the new "Bird Mode" gives you incredible bird detection performance.

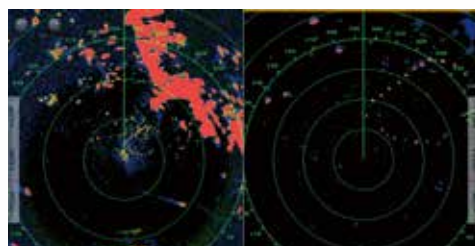
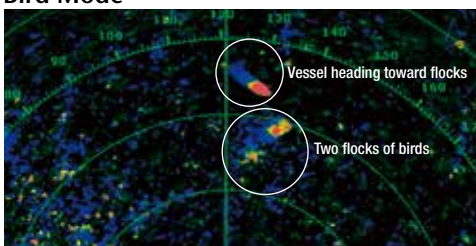
*1 TZtouch version 4.21 or later is required.

*2 Bird mode is also available with DRS4D-NXT.



The radar detects and distinguishes several small yachts with high accuracy.

Bird Mode*



Bird mode and navigation mode can both be displayed via a simultaneous dual mode scanning. Possibility to track the birds while navigating safely

* DRS X-Class Series



Fish Finder

FURUNO Digital Filter (FDF™) Fish Finder

Sensor Lineup

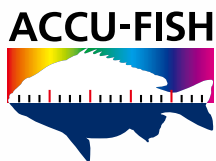
	DFF1-UHD	DFF1	BBDS1	DFF3	DFF-3D NEW
Frequency	Dual frequency 50±20 and 200±25 kHz	Dual frequency 50 kHz and 200 kHz		The synthesized transducer works with dual frequencies between 28 and 200 kHz	165 kHz
Range Scale	Customized upto 1,200 m			Customized upto 1,500 m	Up to 1,200 m
ACCU-FISH™	Available				N/A
Bottom Discrimination	Available	N/A	Available	N/A	N/A
TruEcho CHIRP	Available	N/A	N/A	N/A	N/A
Display Mode	Auto (Fishing/Cruising/Manual), Bottom Zoom, Bottom Lock, A-Scope				Triple/Single Beam Sounder, Side Scan, Cross Section, 3D history
Power Supply	12-24 VDC				
Transducers	1 kW	600 W/1 kW		1, 2 or 3 kW	800 W

Coming soon.



FURUNO Digital Filter (FDF™) Fish Finder

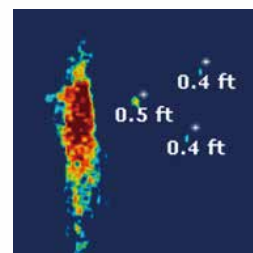
FURUNO Digital Filter (FDF™) fish finders feature advanced filtering capabilities and digital auto tuning, which eliminates noise. FURUNO FDF™ fish finders deliver the ability to spot individual fish with clarity, accuracy and detail. Whether in shallow or deep water, FURUNO FDF™ fish finders give you what you would expect from a fish finder at all times.



ACCU-FISH™ (Fish Size Analyzer)

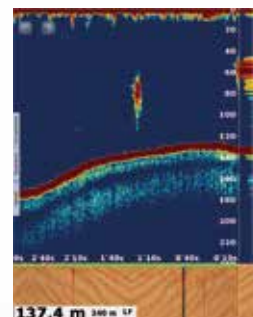
FURUNO's award winning network fish finders offer a unique fish size analyzer function, ACCU-FISH™.

The ACCU-FISH™ algorithm analyzes echo returns to compute individual fish size and display it on the screen.



Bottom Discrimination Display — BBDS1/DFF1-UHD

Utilizing input from the Network Fish Finders BBDS1 or DFF1-UHD, the bottom discrimination display will be shown in the following four categories; "Rocks", "Gravel", "Sand" and "Mud", either in dedicated graphics or colors with corresponding probability. This information is helpful in spotting rich fishing grounds where you can boost your catch of the day.

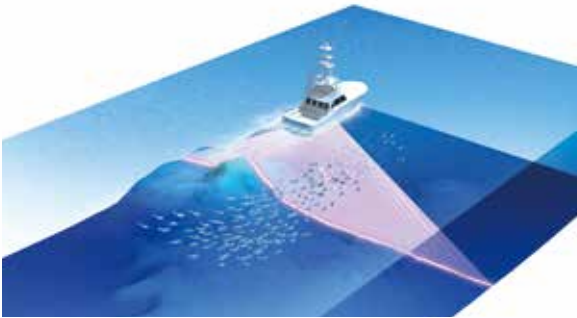


Multi-Beam Sonar

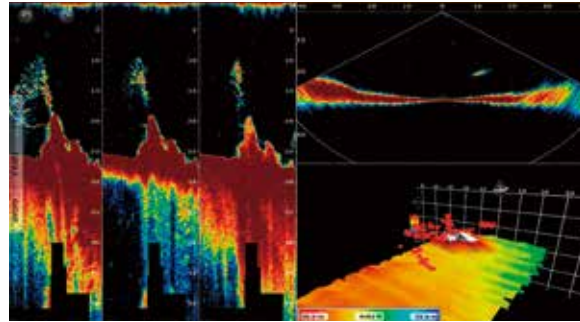
Innovative tool for exploring a wide range of water column and seabed

New Multi-Beam Sonar model DFF-3D gives you real-time 120 port-starboard view of the water column and seabed up to 200m depth*. The DFF-3D allows you to explore fishing spots and find fish in deep water by far faster than conventional single beam sounders. On the other hand, the main beam penetrate right under the boat at a depth of approximately 300 m*. Installation is made easy, thanks to a compact transducer design. The built-in motion sensor gives you clear images under your boat even in rough water.

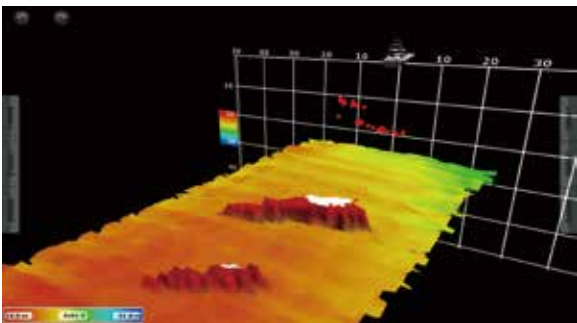
* Maximum depth dependent on installation, bottom type and water conditions.



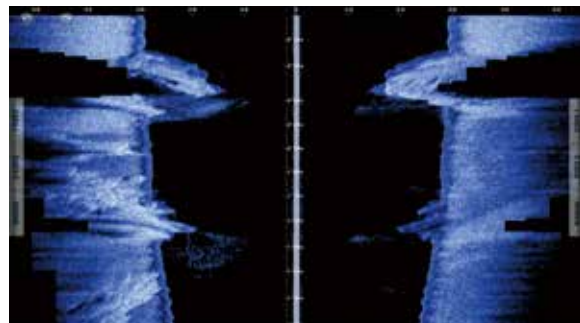
Scanning image of Multi-Beam Sonar



Triple Beam Sounder+Cross Section+3D history



3D history



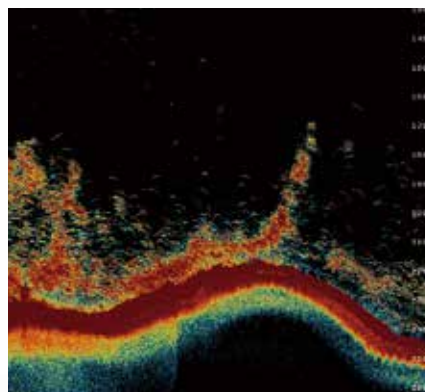
Side Scan



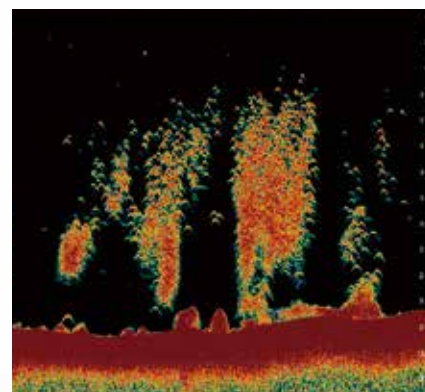
Up to 10 times sharper image than conventional FDF*2

Find More Fish With TruEcho CHIRP™ Fish Finder

An advanced technology for both professional and enthusiast fishermen. Designed to operate across a wide range of frequencies utilizing a broadband transducer, the TruEcho CHIRP™ network fish finder delivers significant advantages in signal clarity and target definition. Due to the constant sweep of frequencies the TruEcho CHIRP™ network fish finder is capable of gathering more and higher quality data than a traditional single frequency fish finder. The clear presentation marks individual game fish and bait fish, even when tightly schooled together.



High Frequency CHIRP



Low Frequency CHIRP

*2 TruEcho CHIRP™ performance may vary depending on depth, range and signal frequency used.

Nothing Is Faster Than TimeZero™



NavNet TZtouch TimeZero™ technology delivers chart processing like you've never seen before – seamless chart handling, zooming and panning without the screen disappearing. TimeZero™ technology redefines the meaning of stress-free operation by smoothing out your chart handling actions.

The Only Acceptable Wait Time is Zero: TimeZero™ Technology Changes Your Perspective on Chart Redraw

Equipped with powerful TimeZero™ technology, NavNet TZtouch will completely transform the way you navigate. You can scroll, pan, zoom in/out with a smooth, fast and seamless graphics engine. Navigating in a fully 3D environment offers you a true perspective and wider area of view around the ship, which allows you to better plan your routes, while TimeZero™ technology updates the information on your screen with virtually no redraw.



Chart Plotter

NavNet TZtouch is the only chart plotter on the market that provides users the ability to choose from official NOAA raster and vector charts, or optional “C-Map” and “Datacore by Navionics” vector cartography, etc. Fully integrating a cutting-edge data algorithm with a high-resolution image processing technique, MapMedia delivers digital navigation charts and satellite photography with absolute clarity. MapMedia vector and raster charts are built upon 3D architecture, which is smoothly integrated with NavNet’s TimeZero™ technology.



2D Raster



2D Vector



3D Raster with Satellite Photo

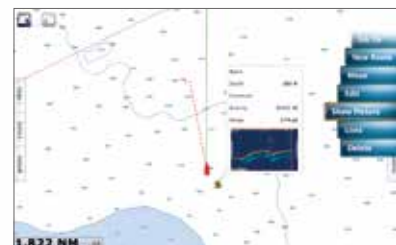
Satellite PhotoFusion™

You can load any two ultra-wide high-resolution satellite photo areas at your convenience. Land areas (zero depth) are completely opaque, so these areas are displayed as high-resolution satellite photos on the chart. As the depth increases, the satellite photography becomes more transparent. This allows you to see where the shallows end and the deeper water begins, while still allowing the raster or vector chart to be visible.



Screen Capture With Event

When an event is entered on the plotter display, a screen capture image can be saved with the point. Tapping the saved point, a screenshot appears in a pop-up window. Any screenshots (ex. Fish Finder, Radar) can be included to customize with your own plotter information.



Fuel Max Range

When a route is activated, NavNet TZtouch will display a pump icon at the spot on the route, where it is predicted that the fuel supply will be exhausted.



The tank level display also available on the instrument page.

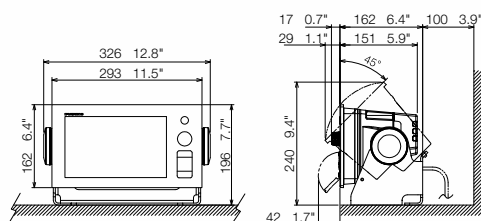
Specifications

Model **TZT9**

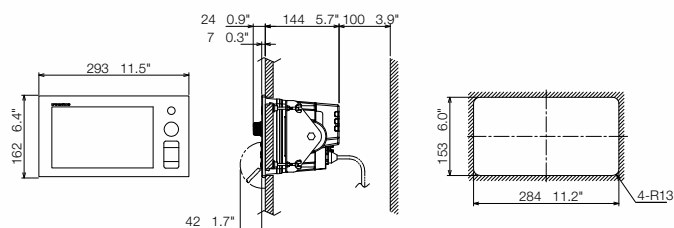


Multi Function Display	TZT9
DISPLAY UNIT	
Type	Color TFT multi touch LCD
Screen Size	9" wide
Screen Resolution	WVGA 800 x 480
Screen Brightness	900 cd/m ² (typical)
Language	English (US & UK), French, Spanish, German, Italian, Portuguese, Swedish, Danish, Norwegian, Finnish, Greek, Chinese, Japanese
CHART PLOTTER	
Cartography	MapMedia mm3d chart (C-MAP/Navionics/NOAA)
Memory Capacity	30,000 user points 30,000 points for ship's tracks 200 planned routes (500 points per route)
Alarms	Anchor Watch, XTE, Proximity, Depth, Temperature, Speed, etc.
RADAR	
Display Modes	Head-up, North-up* *Heading input required.
Echo Trail	Interval: 15 s, 30 s, 1 min, 3 mins, 6 mins, 15 mins, 30 mins and continuous
Target Tracking	30 Targets* *Heading input required.
INTERFACE	
CAN bus	1 Port
LAN	1 Port (100 BASE-TX)
USB	1 Port (USB2.0)
Video Output	1 Port (DVI-D)
Video Input	2 Ports (NTSC/PAL)
SD Card Slot	2 Slots (SDXC card - supports upto 128GB)
ENVIRONMENT	
Temperature (IEC60945)	-15°C to + 55°C
Waterproofing	IP56 (with connector cover), IP22 (with connector boot)
POWER	
Power Supply	12-24 VDC
Power Consumption	42 W (3.5 A - 1.8 A)

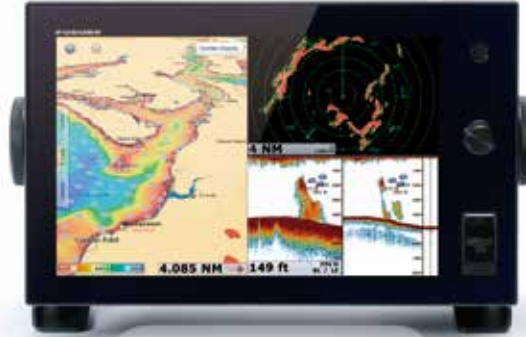
Multi Function Display (Table-top Mount) TZT9
4.7 kg 10.4 lb



Multi Function Display (Flush Mount) TZT9
4.5 kg 9.9 lb

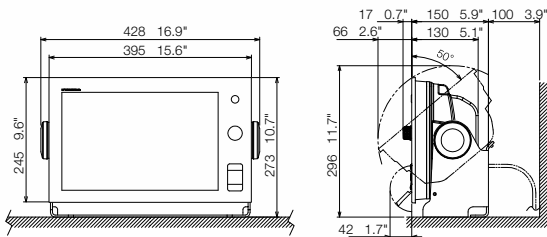


Model **TZT14**

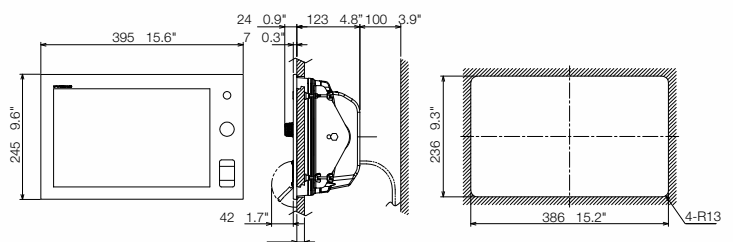


Multi Function Display	TZT14
DISPLAY UNIT	
Type	Color TFT multi touch LCD
Screen Size	14.1" wide
Screen Resolution	WXGA 1280 x 800
Screen Brightness	900 cd/m ² (typical)
Language	English (US & UK), French, Spanish, German, Italian, Portuguese, Swedish, Danish, Norwegian, Finnish, Greek, Chinese, Japanese
CHART PLOTTER	
Cartography	MapMedia mm3d chart (C-MAP/Navionics/NOAA)
Memory Capacity	30,000 user points 30,000 points for ship's tracks 200 planned routes (500 points per route)
Alarms	Anchor Watch, XTE, Proximity, Depth, Temperature, Speed, etc.
RADAR	
Display Modes	Head-up, North-up* *Heading input required.
Echo Trail	Interval: 15 s, 30 s, 1 min, 3 mins, 6 mins, 15 mins, 30 mins and continuous
Target Tracking	30 Targets* *Heading input required.
INTERFACE	
CAN bus	1 Port
LAN	3 Ports (100 BASE-TX)
USB	1 Port (USB2.0)
Video Output	1 Port (DVI-D)
Video Input	2 Ports (NTSC/PAL)
SD Card Slot	2 Slots (SDXC card - supports upto 128GB)
ENVIRONMENT	
Temperature (IEC60945)	-15°C to + 55°C
Waterproofing	IP56 (with connector cover), IP22 (with connector boot)
POWER	
Power Supply	12-24 VDC
Power Consumption	60 W (5.0 A - 2.5 A)

Multi Function Display (Table-top Mount) TZT14
8.0 kg 17.6 lb



Multi Function Display (Flush Mount) TZT14
7.1 kg 15.6 lb



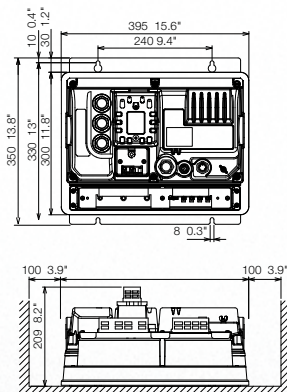
Specifications

Model T ZTBB

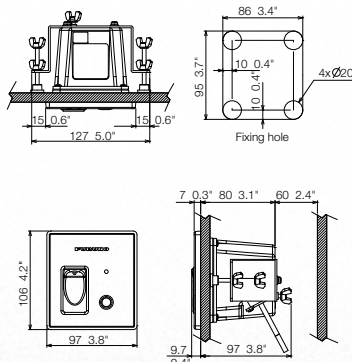


Multi Function Display Black Box	TZTBB
DISPLAY UNIT	
Type	Custom multi touch monitor of your choice
Screen Size	—
Screen Resolution	Supports both wide and non-wide resolutions: 1280 x 720 (16:9), 1280 x 800 (16:10), 1280 x 960 (4:3), 1280 x 1024 (5:4)
Screen Brightness	—
Language	English (US & UK), French, Spanish, German, Italian, Portuguese, Swedish, Danish, Norwegian, Finnish, Greek, Chinese (simplified chinese characters), Japanese
CHART PLOTTER	
Cartography	MapMedia mm3d chart (C-MAP/Navionics/NOAA)
Memory Capacity	30,000 user points 30,000 points for ship's tracks 200 planned routes (500 points per route)
Alarms	Anchor Watch, XTE, Proximity, Depth, Temperature, Speed, etc.
RADAR	
Display Modes	Head-up, North-up* *Heading input required.
Echo Trail	Interval: 15 s, 30 s, 1 min, 3 mins, 6 mins, 15 mins, 30 mins and continuous
Target Tracking	30 Targets* *Heading input required.
INTERFACE	
CAN bus	1 Port
LAN	3 Ports (100 BASE-TX)
USB	6 Ports (USB2.0)
Video Output	2 Ports (DVI-D)
Video Input	2 Ports (NTSC/PAL)
SD Card Slot	2 Slots (SDXC card - supports upto 128GB)
ENVIRONMENT	
Temperature (IEC60945)	-15°C to +55°C
Waterproofing	Processor unit: IP22 Switch box: IP56 (front panel)
POWER	
Power Supply	12-24 VDC
Power Consumption	43.2 W (3.6 A - 1.8 A - including switch box)

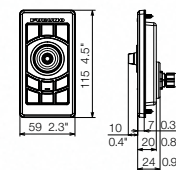
Multi Function Display Black Box
TZTBB MPU-002
8 kg 17.6 lb



Switch Box PSD-002
0.75 kg 1.7 lb



Remote Control Unit MCU-002 (option)
0.14 kg 0.3 lb



Remote Control Unit MCU-004 (option)
0.4 kg 0.9 lb

