NAVnet BLACK BOX TZ2 touch

Total Control, Simply Refined

TZT2BB shown with optional MU-245T Monitors and MCU-005 Control Unit

Total Control, Simply Refined

Multi Touch Marine Display* with TZT2BB Processor Unit (Model MPU-004) and Control Unit** (Model MCU-005)
*Local supply **Option

TZT2BB MFD Black Box - 1920 x 1080 (16:9), 1280 x 1024 (5:4), 1024 x 768 (4:3)

With the ability to drive multiple monitors with full HD HDMI video output in any combination of monitor aspect ratios (4:3 and 4:3, 16:9 and 4:3, or 16:9 and 16:9), a refined graphical user interface, and a built-in RezBoost Fish Finder, Furuno's NavNet TZtouch2 Black Box is a beauty to behold and use. Whether you are searching for hot fishing grounds, plotting your next route, or using your Radar to navigate through fog, TZT2BB delivers smooth operation with familiar touch gestures.

KEY FEATURES

- Internal RezBoost™ Fish Finder
- Full HD HDMI video input available
- NEW Video Converter Kits stream compatible video data directly to TZT2BB MFD
- Compatible with CZone Digital Switching
- Fast processor (CPU) for impressive performance
- Seamless, smooth chart operation with TimeZero™ Technology
- Enhanced touch gestures like edge swiping for frequently used functions
- The GUI has been renewed and refined, focusing on usability and ease of operation
- Independent display and operation of dual screens with built-in dual CPU
- Add Autopilot, Instruments, Radar, AIS, and other sensors to your network
- Connect up to 5 NavNet TZtouch3/TZtouch2 displays on one network
- Wirelessly download up to two weeks of weather data with an Internet connection
- Tablet & Smart phone apps: NavNet Remote, NavNet Viewer and NavNet Controller for your iOS and Android™ devices
- Manual Fuel Management enables visual evaluation of fuel levels and consumption
- Refined, updated OS incorporates TZtouch3 features like PBG (Personal Bathymetric Generator) Fish-It/Drift-It, SiriusXM Fish Mapping, Marker Zoom, and more!
- NavNet Command Center for TZT2BB integrates 3rd Party Apps through a built-in browser

THE BENCHMARK FOR RADAR

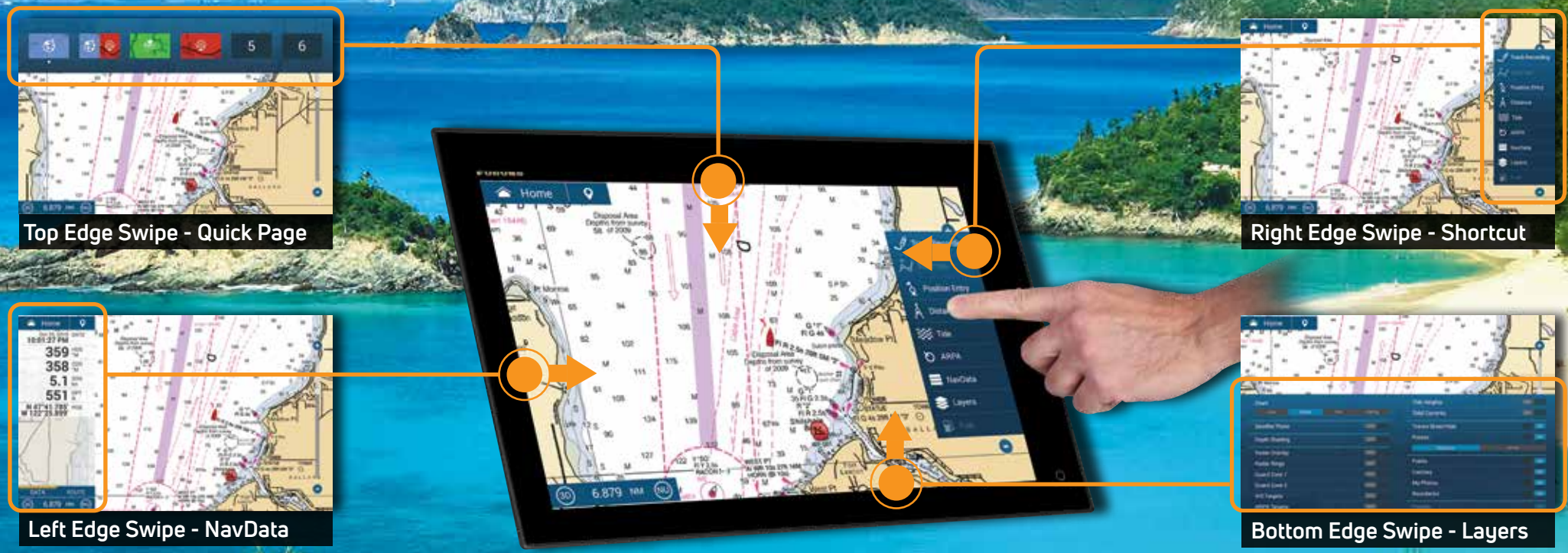
Furuno NXT Solid-State Doppler Radars pack power like never before. From 25 Watt dome optoins to the 200 Watt DRS25A-NXT open array, you will get dynamic features like Target Analyzer™, Fast Target Tracking, Bird Mode, and Rain Mode.

(Some features may require additional sensors)

DEEP WATER MULTI-BEAM SONAR

Real-time 120° port-starboard coverage up to 200m (over 650 ft.) depth and viewing of the water column and seabed directly under the boat 300m (nearly 1,000 ft). The DFF-3D allows you to explore fishing spots and find fish in deep water faster than conventional single beam Fish Finders, plus make your own shaded relief charts with the new PBG (Personal Bathymetric Generator) feature.

Finding your **HAPPY PLACE** shouldn't be difficult.



Simply refined, simply beautiful.

Capitalizing on the amazing GUI of TZtouch3, the TZT2BB features a refined user interface that is all about usability. Elegantly designed, the TZT2BB allows you to build a navigation suite that is not only functional, but offers a luxurious look and feel. Taps, swipes, pinches, and custom multi touch gestures are instantly transformed into action, giving you full control of every component connected to your network.

So we made it as **EASY TO USE** as your phone!

With edge-swipe features and single tap menu options, you're never more than a tap or swipe away from what you want to see or do. It's that simple.

LEFT EDGE SWIPE - NAVDATA

Swipe from the left to bring up your NavData box. Access general Nav Data from the Data tab or App-specific data when on individual pages.

TOP EDGE SWIPE - QUICK PAGE

Swipe down from the top to select your Quick Pages. Think of these as similar to your car stereo presets. Easily set your favorites with a long press.

BOTTOM EDGE SWIPE - LAYERS

Swipe up from the bottom to view App Layers. Toggle commonly used items & layer them on your screen.

RIGHT EDGE SWIPE - SHORTCUT

Swipe from the right of the screen to bring up the menu of often-used functions, such as Tracks, Position Entry, Tides, ARPA, Fuel, CZone, and more.

INCREDIBLY EASY-TO-USE CONTROLLER AND GRAPHICAL USER INTERFACE

The optional MCU-005 (below) NavNet TZtouch2 Black Box controller enhances the built-in Multi Touch graphical user interface, and sets a new benchmark for "easy to use" in the marine electronics industry. This interface is not only intuitive, but is as easy to use as the phone in your pocket. The combination of an ergonomically designed, logical controller, along with a touch-screen Graphical User Interface, make operation simple. With taps, slides and swipes, you will be up and using your TZT2BB in no time at all. Menus and other features slide out from each of the sides of the screen, ensuring that the most important tasks are literally right at your fingertips.

The available MCU-004 (right) Remote Control option features a large rotary knob which can be utilized for zooming in/out, while the joy stick allows you to pan around the chart and move the cursor on the screen. The MCU-004 remote has 8 dedicated buttons that operate different functions, such as Edge Swiping, Home, Stand By/Auto for Autopilot control, MOB, and Center on vessel.

The innovative TEU001 (left) Touch Encoder Unit provides a compact, touch-based interface that emulates the already familiar Edge Swipe UI of NavNet TZtouch2. It also incorporates a beautifully designed RotoKey™ for easy access and tactile control of many common operations, including zoom in/out and quick menu scrolling. The color LCD touchscreen will enhance the look of any dash and provide incredible armchair control.

Powerful Dual-Frequency **FISH FINDER** built-in!

Powerful Fish Finder with Built-In Furuno Features

The built-in Fish Finder is a dual-frequency (50/200kHz), 600W/1kW power output sounder. It includes Furuno's unique Bottom Discrimination and AccuFish™ modes, and also incorporates another new Furuno proprietary Fish Finder technology, called RezBoost™. RezBoost™ is a revolutionary feature that utilizes Furuno's exclusive digital signal processing protocol to produce fantastic target resolution and separation, without the need to change out your transducer, or purchase expensive broadband transducers. With RezBoost™, you can now achieve target separation and resolution that was previously limited to Furuno commercial-grade Fish Finders.

BOOST YOUR RESOLUTION WITH REZBOOST™

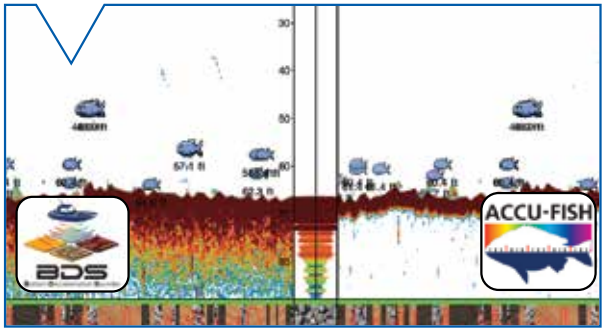
RezBoost™ is a revolutionary signal processing technology developed by Furuno that improves resolution and target separation when using conventional narrow-band transducers. Compared to conventional signal processing techniques, a RezBoost™ Fish Finder produces an image that is up to 8 times*1 clearer. What can be done with a conventional narrow-band transducer, like the one you might have installed on your vessel, is truly impressive.

Performance may vary depending on depth, range and signal frequency used. The Enhanced mode requires a RezBoost™ capable thru-hull or transom mount transducer.

BOTTOM DISCRIMINATION DISPLAY* AND ACCU-FISH™ FISH SIZE ANALYZER**

Bottom Discrimination provides detailed information about the composition of the seabed & organizes it into four different categories: Rocks, Gravel, Sand, and Mud.

The ACCU-FISH™ algorithm analyzes echo returns in order to compute individual fish size. The algorithm is capable of calculating fish size ranging from 10 cm up to 199cm (>4" to <78") long. Fish depth can also be displayed.



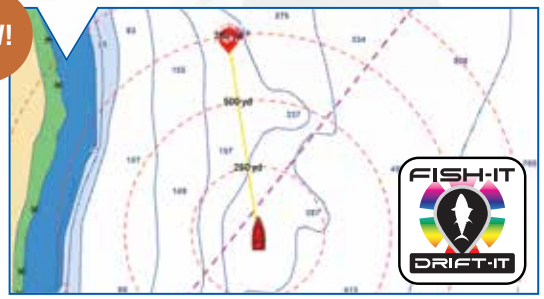
Probability Mode:
Rocks Gravel
Sand Mud

Graphic Mode:
Rocks Gravel
Sand Mud

**Feature works with certain transducers. Check to ensure your transducer is compatible.*
***In some instances, fish size indicated on the TZT2BB may differ from its actual size. Please carefully read the operator's manual before utilizing this feature.*

DRIFT-IT, FISH-IT... CATCH-IT!

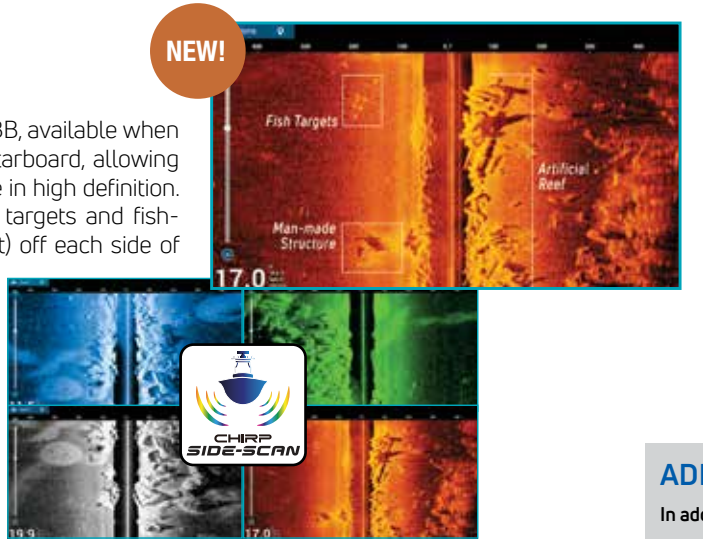
NEW!



Tap on a fishing location such as a pinnacle, wreck, artificial reef, point, or any place on the screen to create a Fish-It Point. Now activate the Drift-It feature on the data bar and it automatically calculates your drift starting location to allow a perfect drift over the Fish-It spot. Drift-It will save time and fuel by eliminating the guesswork in determining vessel drift in challenging wind and current conditions.

NEW CHIRP SIDE-SCAN WHEN CONNECTED TO TZTOUCH3*

NEW!

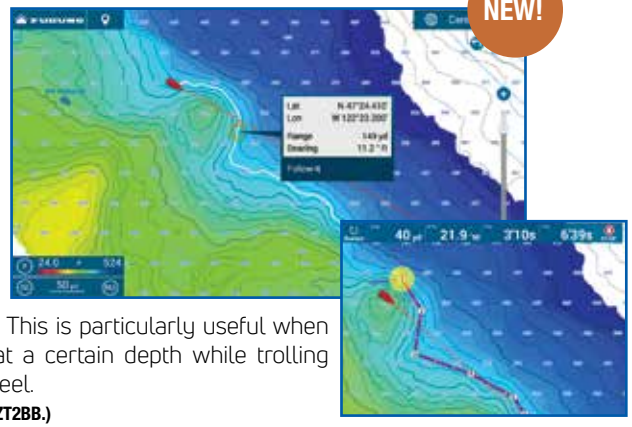


Furuno's CHIRP Side-Scan for NavNet TZT2BB, available when networked to TZT3*, scans both port and starboard, allowing boaters to see the shape of bottom structure in high definition. CHIRP Side-Scan reveals the shape of fish targets and fish-hoarding structure up to 228 meters (750 ft) off each side of your vessel. It's ideal for fishing or simply showing hidden, uncharted bottom structure in rich detail in 1/4, 1/2, or full-screen presentations on NavNet TZtouch3 TZT12F, TZT16F, or TZT19F. Available with Thru-hull, Paired, or Transom Mount Transducer.

(*Software ver. 3.50 or higher required for TZtouch3; ver. 9.50 or higher required for TZT2BB. CHIRP Side-Scan can be displayed on TZT2BB when networked to a TZT12F, TZT16F, or TZT19F.)

NEW FOLLOW-IT

NEW!



Leverage your recorded PBG data like never before. Now you can create a constant depth route from the PBG data, allowing you to select Follow-It from the menu and send it to your NAVpilot Autopilot. Then the NAVpilot will automatically follow the depth route all the way around a ridge or trough. This is particularly useful when you want to keep your bait at a certain depth while trolling without having to adjust your reel.

(Software ver. 9.5 or higher required for TZT2BB.)

ADDITIONAL FISH FINDER OPTIONS

In addition to the built-in Fish Finder, you can also connect the DFF3, DFF1-UHD, DFF3-UHD, BBDS1, OR DFF-3D via Ethernet.

Take your adventure **FARTHER** knowing you will get home safe.

Go Boldy Knowing That Your Radar Will Get You And Your Family Home Safely

When you're serious about adventure, you will no doubt find yourself navigating at night, moving cautiously in the fog, and probably dodging the occasional squall. The good news is that you will have Furuno's high-power Radar to guide you every step of the way. Both the NXT Solid-State Doppler and the X-Class Radars have you covered for watching storms with Rain Mode, monitoring hazardous targets with Target Analzyer™ (NXT only), Fast Target Tracking, and even finding birds with Bird Mode.

More power means

BETTER DETECTION

of all the targets around you!

Experience high-power Radar and amazing target detection with Furuno's NXT and X-Class Radars. We juiced the power of our NXT Solid-State Doppler Radars to give you outstanding long-distance performance that matches their amazing close range capability.

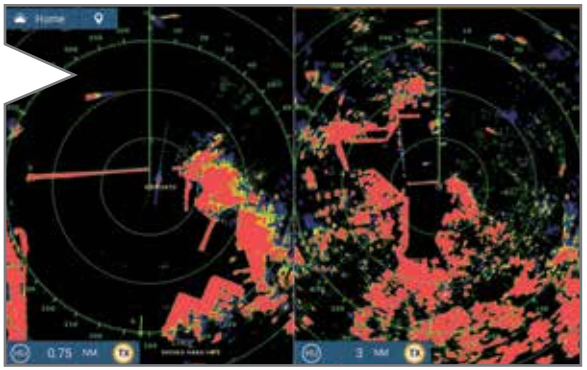
	DOME	OPEN ARRAYS - 3.5', 4', OR 6'		
NXT	DRS2D-NXT/DRS4D-NXT	DRS6A-NXT	DRS12A-NXT	DRS25A-NXT
X-CLASS	DRS4DL+	DRS6AX	DRS12AX	DRS25AX

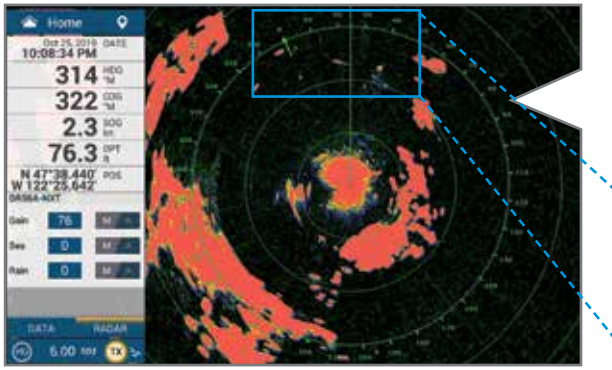
DUAL RANGE MODE (Not available with DRS4DL+)

Simultaneous scanning technology produces a dual progressive scan to display & update two Radar pictures, both long & short range.[1] Autonomous control over gain & anti-clutter can be performed on each Radar presentation.[2] This can be used to have one screen with the gain set to locate birds and buoys, while you use the other Radar screen to navigate.

[1]: Limited to 12NM on DRS-NXT Series, Combination Screens i.e. Bird Mode + Bird Mode, etc. not available

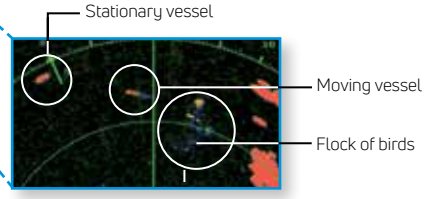
[2]: Auto Sea Mode, Gain, Rain/Sea Clutter not autonomous in Dual-Range Mode on DRS-NXT series





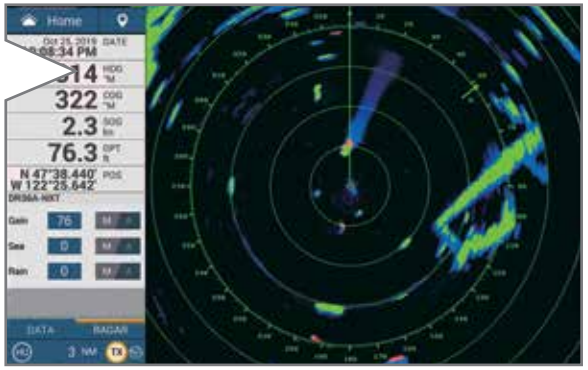
BIRD MODE

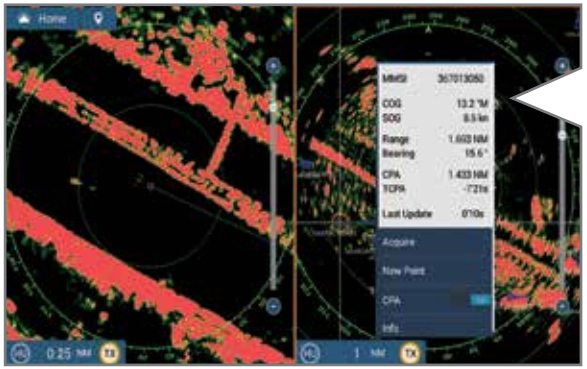
Bird Mode works by automatically adjusting the gain & sea settings for optimal visibility.



TARGET ANALYZER™

Target Analyzer™ function displays targets that are approaching your vessel & automatically changes color to help you identify potentially dangerous targets. Green echoes are targets that are stationary or are moving away from you, while red echoes are hazardous targets that are moving towards your vessel. Target Analyzer™ improves situational awareness and can increase safety by showing you which targets to watch (Available with NXT Radars only).





AIS TARGET TRACKING

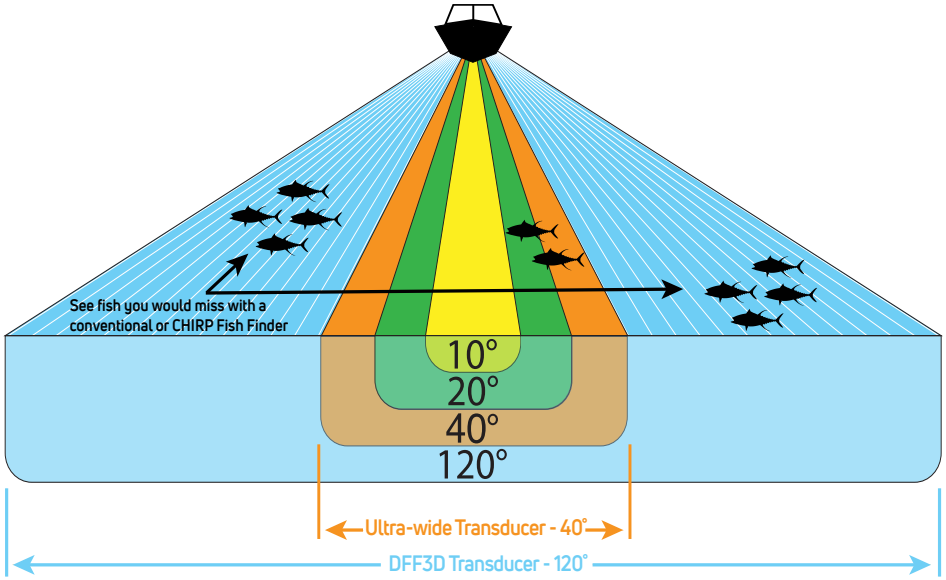
When connecting an FA-series AIS to your TZT2BB, AIS targets can be displayed on both the Radar and Plotter screens. The Automatic Identification System (AIS) improves safety during travel by sharing the status & position of your vessel with other AIS-equipped vessels nearby.

More power to see 120°

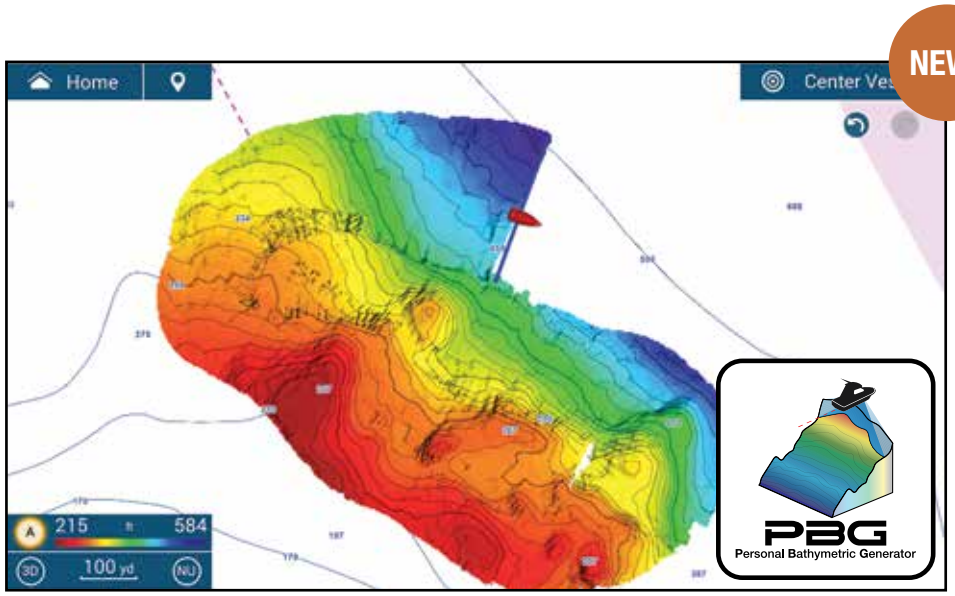
PORT-STARBOARD

giving you an edge over the competition.

Normal down-sounding Fish Finders have a beam angle of 40° or less. But with the DFF-3D Multibeam Sonar, you see 120° port-starboard for 200m (650+ ft). Plus, with the power of the DFF-3D, you can see fish directly below the boat 300m (nearly 1,000ft).

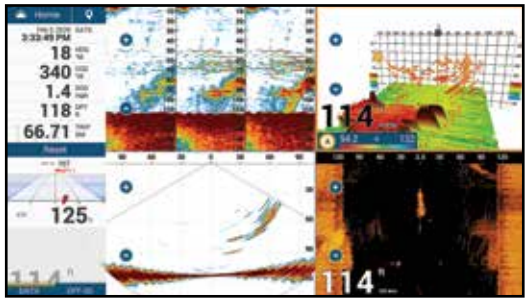


The DFF-3D Multibeam Sonar operates at 165kHz, giving you fantastic depth penetration while still displaying echoes in high-resolution. Compared to a 40° ultra-wide transducer, you will see 3X the area around your boat, helping you to find fish you might have otherwise missed. Plus, you can see which side of the boat they are on!



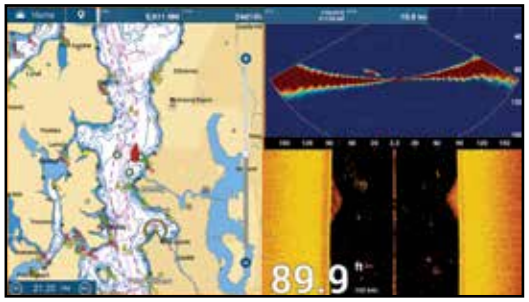
BATHYMETRIC SHADED RELIEF MAPS

Quickly create your own PBG (Personal Bathymetric Generator) Shaded Relief Maps using TZT2BB and the DFF-3D. Instead of just one depth per point, the DFF-3D provides 50 points. Discover new fishing hot spots and save them to the cloud, so you can return again and again! Bottom images are drawn with shaded relief, depth contours, spot soundings, and variable colors, making it easy to identify hidden structure and ridges that hold fish in a simple, easy-to-interpret presentation. Multiple color palettes are available, including the ability to show contour lines only. The area each ping covers is approximately 3X the depth at the time of recording, so at a depth of 100 meters, a 200 meter-wide area is displayed and recorded to your TZT2BB.



USE DFF-3D WITH YOUR FISH FINDER

This is a powerful combination that helps you get on the fish like never before. Use your standard Fish Finder on low-frequency to go deep (left side of the screen) and then use the DFF-3D for your high-frequency to see fish in the water column. With the 3D History and Triple Beam Modes, you can easily see which side of the boat the fish are located, so you know where to drop your line.



EASILY SEE WHERE TO DROP LINES

When you find fish, you can quickly drop a mark on your Chart Plotter and activate Fish-It & Drift-It. Then looking at the DFF-3D's Cross Section and Side Scan Modes (right side of the screen), you can easily determine which side of the boat the fish are on, how deep they are, and how far out from the boat they are swimming. It's almost like you have a tracker attached to them!

Build the ultimate

NAVIGATION SUITE

customized to your specific needs.

Systems can be as big or small as you need.

Add, change or remove AIS, Compass,

Weather and other sensors as needed to dial in your dashboard,

whether fishing, cruising or sailing.

FREE 24 HOUR MARINE WEATHER FORECASTING

The built-in NavCenter weather tool is completely free & easy to use, giving you unlimited access to weather forecasts worldwide 24 hours a day. Select the coverage you want, what type of data you need and for what time period, then simply download the data.

Also available on TZT2BB is the BBWX4 SiriusXM Satellite Weather Receiver. Get up-to-date weather info/forecasting, plus play your favorite SiriusXM Satellite Radio channels.

(U.S. & Canada only, Paid Subscription required)

FA-40 & FA-70 AIS RECEIVER & TRANSPONDER

The FA-40/70 AIS receives the vessel name, call sign, position, COG, SOG, and other useful information from surrounding vessels. The FA-70 is a Class-B+ AIS that transmits your vessel information at higher power & faster rates than typical Class B units for added awareness. SOTDMA guarantees an AIS time slot allocation, making you visible in congested waters.

NEW!

FISH MAPPING BY SIRIUSXM

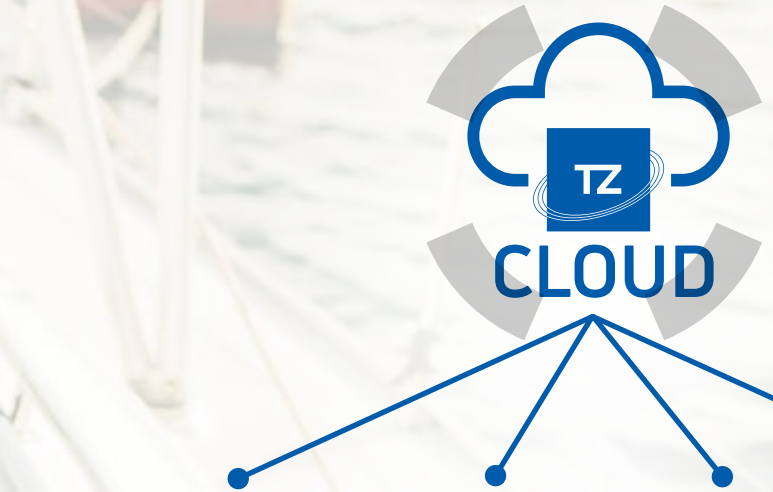
SiriusXM Fish Mapping provides Fishing Recommendation Areas for up to 6 fish species such as Tuna, Billfish, Swordfish, Kingfish, Wahoo, and Mahi. Fish Mapping also provides information such as Water temperature, SST contours, subsurface temperatures up to 30m, temperature contours, weed lines, plankton concentrations and front strength, sea surface anomalies, etc.

(U.S. & Canada only, Paid Subscriptoin required)

SCX-20 SATELLITE COMPASS

The SCX-20 enhances the performance of onboard TZT2BB sensors such as Radar, Chart Plotter, Fish Finders, Sonar, and Autopilot. The unprecedented quad antenna design of the SCX-20 makes it capable of calculating extremely accurate heading, pitch, roll, and heave information.

Welcome to your **GO ANYWHERE** command center.



TZ PC Software

Cloud.MyTimezero.com

TZ iBoat iOS App

TZT2BB

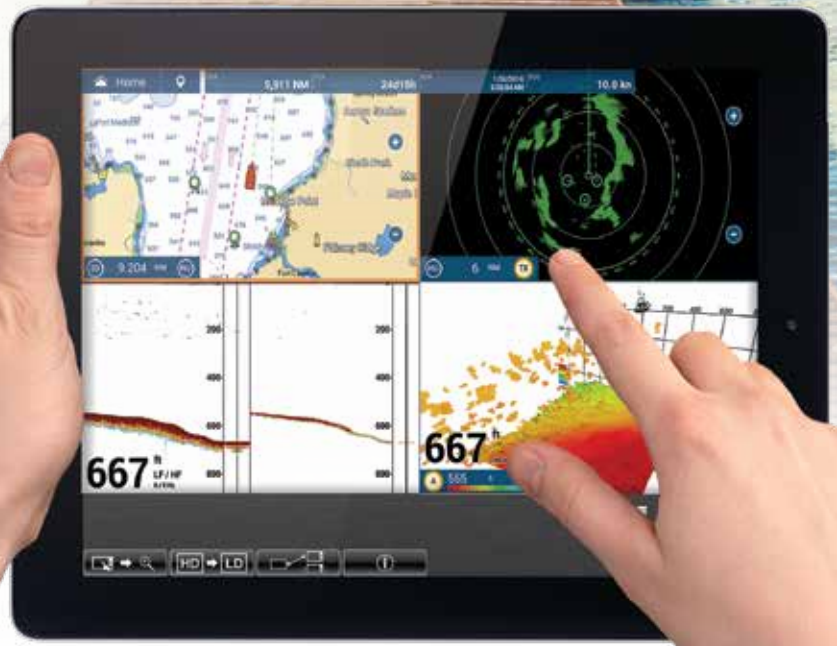
NEVER LOSE WAYPOINTS, ROUTES OR SETTINGS AGAIN WITH TZ CLOUD

Create your routes at home using TZ Navigator, a web browser*, or TZ iBoat iOS App. Then you can retrieve them from the cloud & download to your TZT2BB. Also, create events on your MFD and retrieve them at home because the data is synchronized automatically & securely to My TimeZero. TZ Cloud also stores marks, routes, boundaries, photos, and catch data!

(*Cloud.MyTimezero.com raster planning charts for US only)

An intelligent **CONNECTION** between boat and captain.

When you're out on the water, you want to be on top of your game. So, you train like the pros. You prep all of your equipment. And before you head out, you do your homework. The good news, TZT2BB just made it all easier.



NavNet VIEWER APP

Conveniently view instruments as well as the Fish Finder on your smart devices over the Wireless LAN network. Essential nav data such as Depth, Temp, Wind, COG as well as Engine info are accessible from the palm of your hand.

NavNet REMOTE APP

Take full control of your TZT2BB in a whole new way. The NavNet Remote app allows you to operate and view your system with your smart devices remotely.

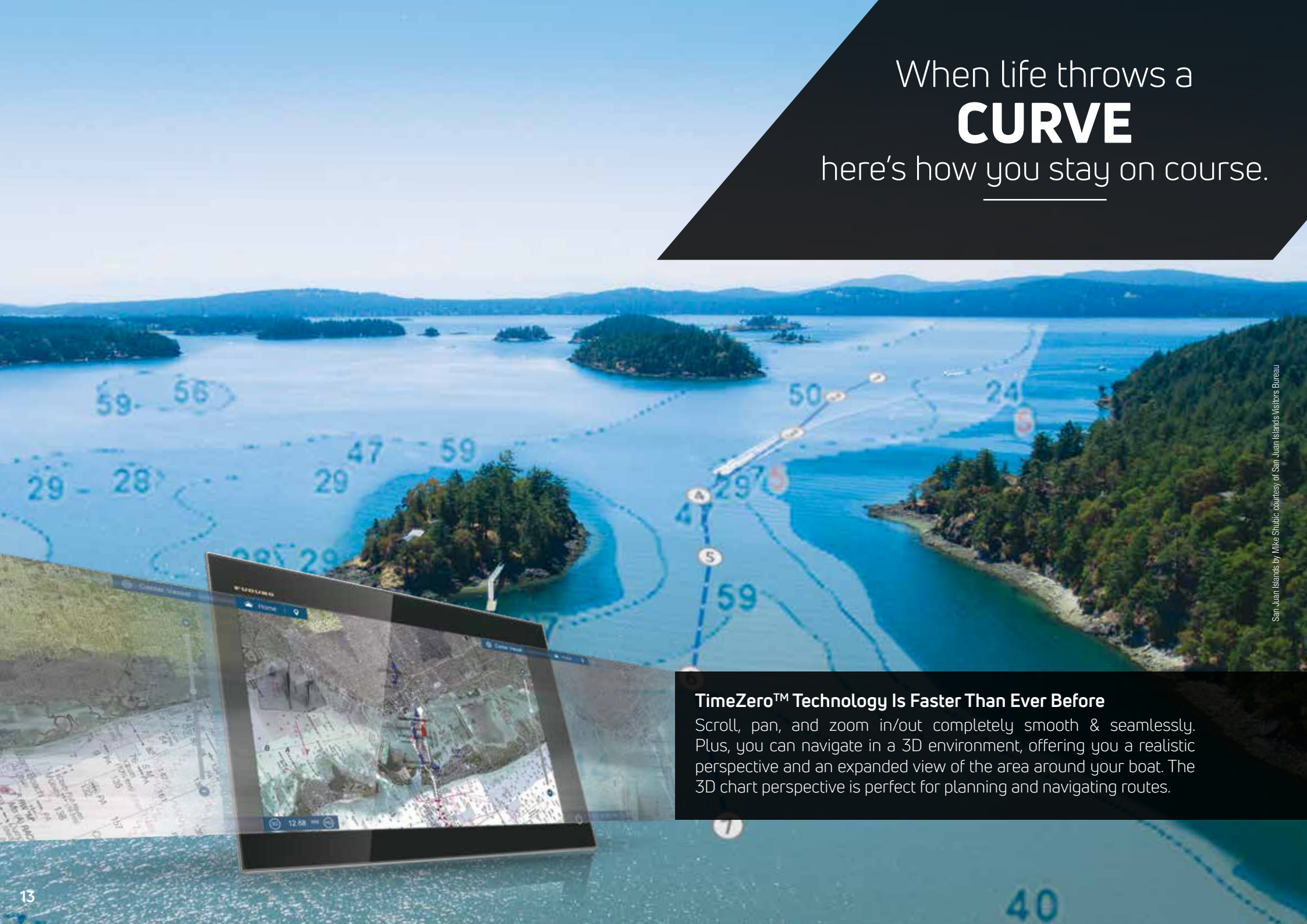
NavNet CONTROLLER APP

Also available is the NavNet Controller App, which allows you to control your TZT2BB with a scroll pad, cursor pad, and dedicated keys.

GET IT ON Google Play

Download on the App Store

When life throws a **CURVE** here's how you stay on course.



San Juan Islands by Mike Shubic courtesy of San Juan Islands Visitors Bureau

TimeZero™ Technology Is Faster Than Ever Before

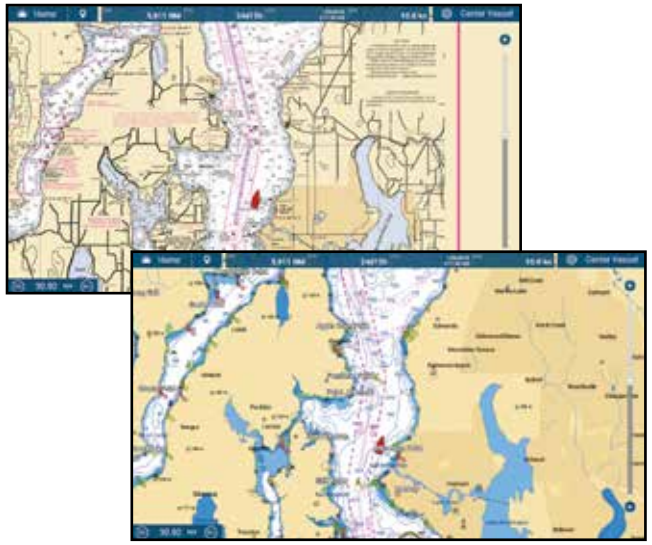
Scroll, pan, and zoom in/out completely smooth & seamlessly. Plus, you can navigate in a 3D environment, offering you a realistic perspective and an expanded view of the area around your boat. The 3D chart perspective is perfect for planning and navigating routes.

We have all the

FEATURES YOU NEED

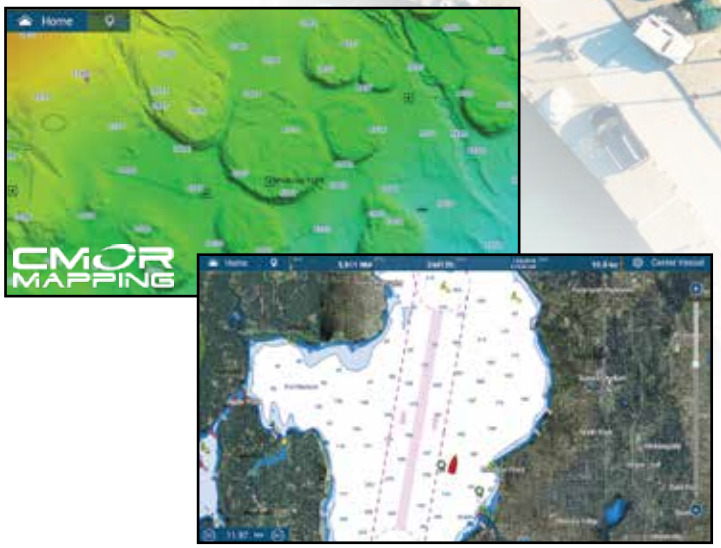
to make a good cruise great!

You will find them in every harbor around the world: everyday people who refuse to be constrained by how far they can see. The ones who go all in because of their love for being on the water. They've inspired us to build a Chart Plotter that is not inhibited by standard features. Rather, we've created a Chart Plotter with speed & performance that allows you to pursue what thrills you...on any course you choose.



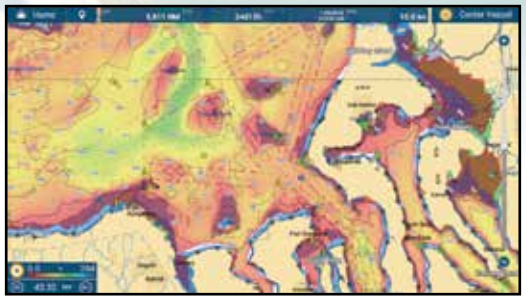
MAPMEDIA VECTOR AND RASTER CHART LIBRARY

Freely choose the charts that fit your individual needs. MapMedia brings an extensive library to your TZT2BB and makes it easy to select raster, vector, or fishing charts. Optional MapMedia C-MAP vector charts can be easily unlocked. MapMedia cartography integrates cutting edge algorithms with high-resolution image processing techniques to deliver a fusion of digital navigation charts and satellite photography.



SATELLITE PHOTOFUSION™ & CMOR CHARTS (U.S. ONLY)

Satellite photography is included in most MapMedia charts and accessed using PhotoFusion™. Land areas (zero depth) are completely opaque, displayed as satellite photos on the chart. As the depth increases, the satellite image is merged with the chart data to provide you with added detail on seabed areas in shallow water, without losing vital chart information. CMOR's high-resolution, shaded-relief bathymetric bottom images help navigators identify suitable locations for fishing and diving (U.S. only).



VECTOR & RASTER DEPTH SHADING

A depth color scale can be applied to both 2D and 3D vector and raster charts. Transparency levels can be adjusted, so that chart data is visible beneath the color shading. This feature allows you to view water depths at-a-glance with vibrant colors. No more searching for depth numbers, when you can easily set depths to your specified colors.

NavNet TZtouch2 Black Box Network/Products Lineup

RADAR

Radar Sensor
DRS4DL+/DRS2D-NXT/DRS4D-NXT
DRS6A/12A/25A-NXT
DRS6A/12A/25A X-Class
Ethernet

FISH FINDER

Fish Finder
DFF1-UHD/DFF3-UHD/DFF3
Ethernet

Bottom Discrimination Fish Finder
BBDS1
Ethernet

Multibeam Sonar
DFF-3D
Ethernet

AIS

AIS Receiver
FA-40
NMEA2000 NMEA0183

Class-B AIS Transponder
FA-70
NMEA2000 NMEA0183

Class-A AIS Transponder
FA-170
NMEA0183 Ethernet

FISH FINDER Internal

Internal Dual-Frequency
50/200 kW

WEATHER/ PC PLOTTER

TimeZero PC Software
Ethernet

Network Weather Facsimile Receiver
FAX-30

Network Satellite Weather and Radio Receiver
BBWX4*2
Ethernet

NMEA2000 Certified

NavNet TZT2BB is NMEA2000 certified. NMEA2000 offers improved data transfer rates and true plug-and-play operation.

TZT2BB

OTHERS

NavNet Command Center *More apps planned
3rd Party Compatible Apps (v2.01*)

QUICK OmniSense LUMISHORE OSCAR victron energy SEAKEEPER
Ethernet

Marine Entertainment System
Fusion APOLLO Series, etc.
Ethernet NMEA2000

IP Camera
Ethernet

Thermal Camera
Ethernet Video

C2ONE
Digital Switching System
CAN bus

HDMI IN

USB Passthrough

CONVERTER

NMEA Data Converter
IF-NMEA2K2
CAN bus NMEA0183

Analog NMEA Data Converter
IF-NMEAFI
CAN bus Analog

IP Video Stream Encoder (VGA)
VI-CSH8L
Video Ethernet

IP Video Stream Encoder (HDMI)
VI-HDMI
Video Ethernet

*1 Optionally connect a 5kW or 10kW transducer to DI-FFAMP using BT-5
*2 SiriusXM weather coverage is currently available only in U.S. and Canada. SiriusXM subscription required.

NAVnet Connect

AUTOPILOT

AutoPilot
NAVpilot-300
NMEA2000

AutoPilot
NAVpilot-711C
NMEA2000 NMEA0183

COMPASS

Integrated Heading Sensor
PG-700
CAN bus

Satellite Compass
SCX-20
NMEA2000

Satellite Compass
SC-33
NMEA2000 NMEA0183

Satellite Compass
SC-70
CAN bus NMEA0183

GPS

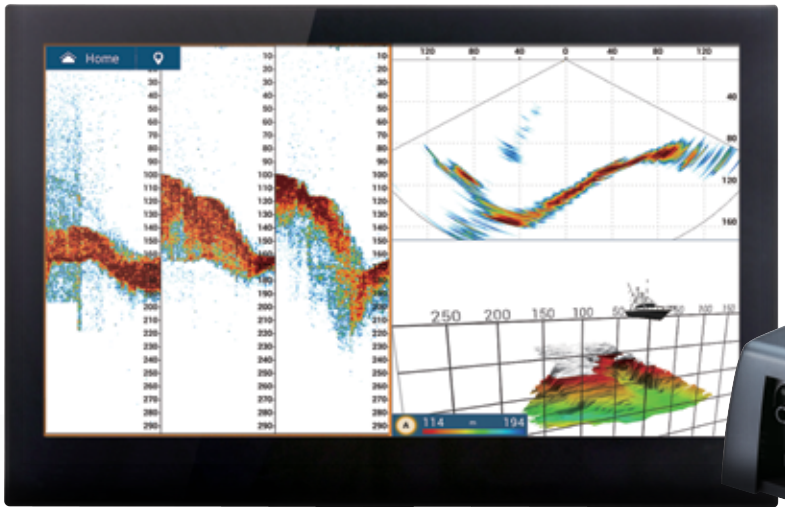
GPS/WAAS
Receiver Antenna
GP-330B
NMEA2000

GPS Navigator
GP-33
CAN bus NMEA0183

SENSOR

Ultrasonic Weather Station
220WX*3
CAN bus

Depth/Speed/Temp Sensor
& other smart sensors for depth/speed/temp
DST-810
CAN bus



Multi Touch Marine Display* with TZT2BB Processor Unit (Model MPU-004) and Control Unit (Model MCU-005)**
***Local supply **Option**

INSTRUMENT

Wind Transducer - Analog
FI-5001/L*4
NMEA2000

Instrument
FI-70
CAN bus

OPTION

Touch Encoder Unit
TEU001B (Black)
TEU001S (Silver)

Remote Control Unit
MCU-004
USB

Remote Control Unit
MCU-002
USB

Keyboard
MCU-005
Ethernet

Interface Connection Legend

- Ethernet — Ethernet 100 Base-T Connection
- CAN bus — Can bus or NMEA2000 Connection
- NMEA0183 — NMEA0183 Connection
- Video — Video Connection
- Analog — Analog Connection
- USB — USB Connection

*3 220WX available only in U.S. and Canada. *4 Requires IFNMEA-IF Data Converter.

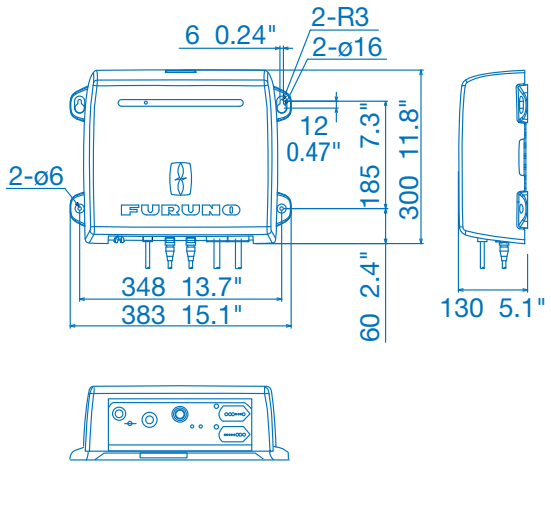
Specifications - NavNet TZT2BB

NavNet TZtouch2 Black Box	
MODEL	**TZT2BB**
DISPLAY UNIT	
Type	Requires optional color LCD, Recommended color LCD with touch panel control
Screen Size	Dependent upon display selected
Screen Resolution	FHD 1920 x 1080 (recommended), XGA 1024 x 768, SXGA 1280 x 1024
Screen Brightness	Dependent upon display selected
Display Colors	Picture: HDMI, Extended HDCP Touch Panel: USB 2.0, Windows® 7 multi-touch
Language	Bulgarian, Chinese, Danish, English (USA/UK), Finnish, French, German, Greek, Italian, Japanese, Norwegian, Portuguese, Russian, Spanish, Swedish
CHART PLOTTER	
Cartography	MapMedia mm3d chart (CMOR(U.S. only)/C-MAP/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, Depth*, Speed, Sea Surface Temperature*, Trip Distance, Fuel Gauge*, Wind Alarm*, Boundary Alarm (*external data required)
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 ARPA Targets (Up to 100 Targets can be tracked with DRS-NXT Series Radar)
Radar Alarms	Guard Zone, CPA/TCPA, Trigger, Video, Azimuth, Heading Line
FISH FINDER	
Transmit Frequency	CW: 50/200kHz
Transducer	300/600 W or 1 kW* *Matching box MB1100 required for some FURUNO transducers.
Display Range	2 to 1,200 m, shift: 0 to 500 m
Display Mode	RezBoost™*, ACCU-FISH™*, Bottom Discrimination*, A-Scope, Auto (Fishing/Cruising), Bottom Zoom, Bottom Lock *Compatible transducer required
Picture Advance	8 steps: x4, x2, x1, 1/2, 1/4, 1/8, 1/16, stop
INTERFACE	
CAN bus/NMEA2000	1 Port
Input	059392, 059904, 061184, 060928, 065280, 126208, 126720, 126992, 126996, 127237, 127245, 127250, 127251, 127257, 127258, 127488, 127489, 127505, 128259, 127267, 129025, 129026, 126029, 126033, 126038, 126039, 126040, 126041, 126291, 126538, 126540, 129793, 129794, 129798, 129801, 129802, 129808, 129809, 129810, 130306, 130310, 130311, 130312, 130313, 130314, 130316, 130577, 130578, 130817, 130818, 130820, 130822, 130823, 130826, 130827, 130828, 130880
Output	059392, 059904, 061184, 060928, 126208, 126464, 126720, 126992, 126993, 126996, 127250, 127251, 127257, 127258, 128259, 128267, 128275, 129025, 129026, 129029, 129033, 129283, 129284, 129285, 130306, 130310, 130312, 130313, 130314, 130316, 130821, 130822, 130823, 130827
NMEA0183	1 Integrated Output Port
Output	CUR, DPT, GGA, GSV, HDG, HDT, MDA, MTW, MWV, RSA, ROT, VDM, VHW, VTG, XDR, ZDA
LAN	3 Ports (100 BASE-TX)
USB	5 Ports (USB2.0)
Video I/O	Input: 1 Port (HDMI, FHD 1920 x 1080p, SXGA 1280 x 1024p, XGA 1024 x 768p) Output: 2 Ports (HDMI, FHD 1920 x 1080p, SXGA 1280 x 1024p, XGA 1024 x 768p)
AUX I/O	1 Port (External Event/MOB Input/Power switch/Alarm Output)
SD Card Slot	2 Internal Slots (SXDC card - supports up to 256 GB)
Wireless LAN	IEEE802.11b/g/n, Transmit frequency: 2.4 GHz band
Transducer	1 Port x MJ10 pin
ENVIRONMENT	
Temperature (IEC60945)	-15°C to +55°C
Relative Humidity	93% or less at +40° C
Waterproofing	Processor: IP22, Switch Box: IP56, Control Unit (optional): IP56
POWER	
	12-24 VDC, 2.6-1.3 A

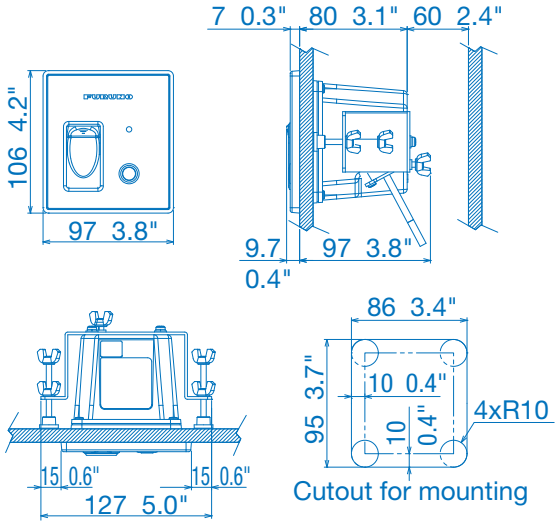
Specifications - NavNet TZT2BB Continued

TZT2BB

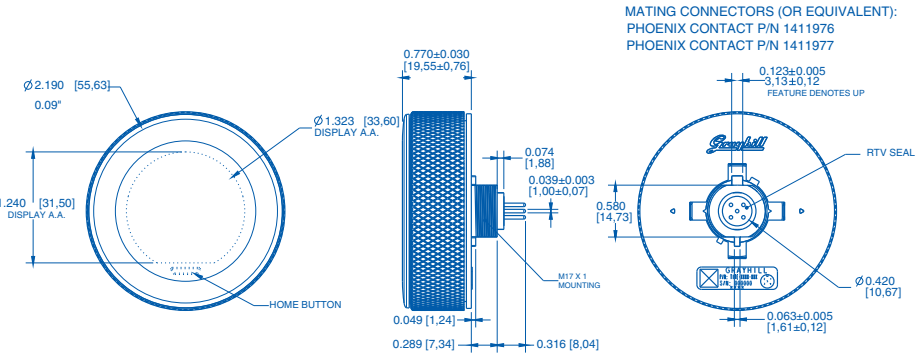
Multi Function Display Black Box TZT2BB MPU-004 3.9 kg 8.6 lb



TZT2BB Switch Box PSD-003 0.75 kg 1.7 lb

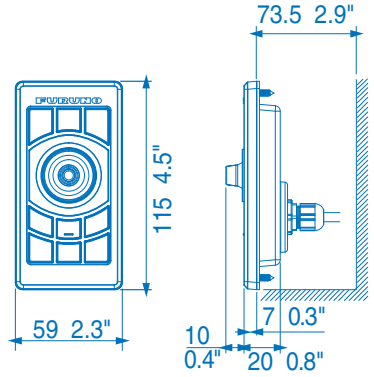


Touch Encoder Unit TEU001B/S (option, U.S. and Canada only) 0.12 kg 0.26 lb

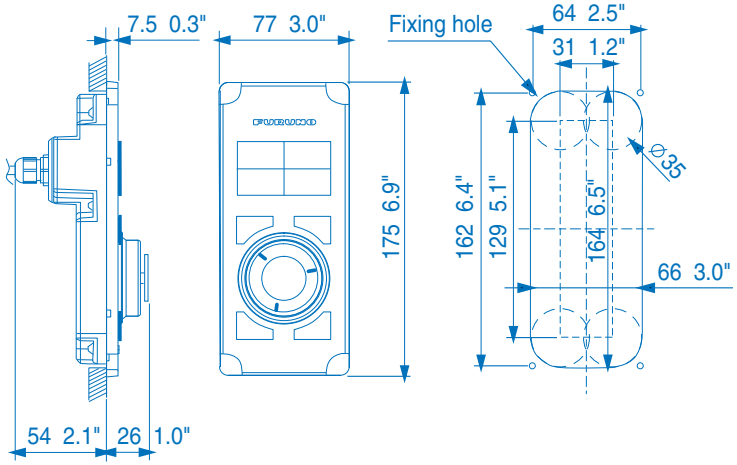


Controllers and Storage

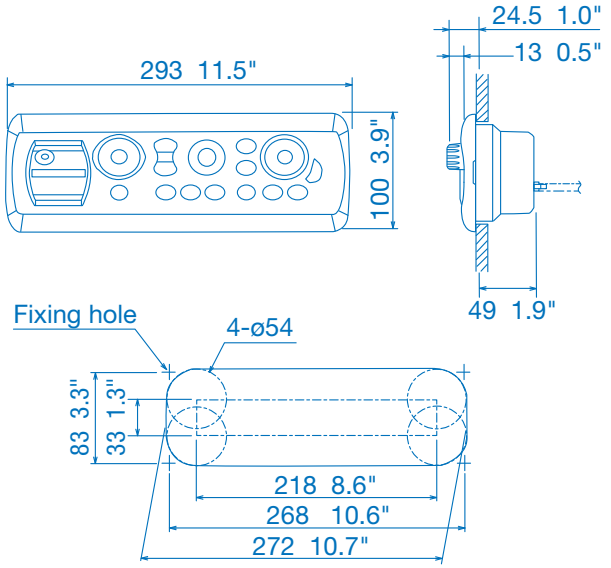
Remote Control Unit
MCU-002 (option) 0.14 kg 0.3 lb



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



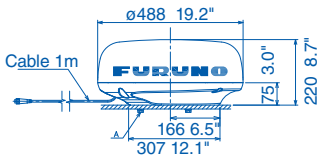
Control Unit MCU-005 (option) 1.0 kg 2.2 lb



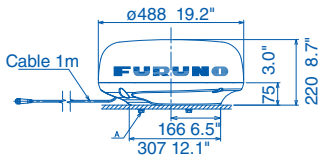
Specifications - NavNet Series Radar

MODEL		NavNet SERIES RADAR SENSOR					
		DRS4DL+	DRS2D-NXT	DRS4D-NXT	DRS6A-NXT	DRS12A-NXT	DRS25A-NXT
ANTENNA							
Type		ø488 mm Radome (19")		ø610 mm Radome (24")	ø1036 mm Open (3.5') 1255 mm Open (4') 1795 mm Open (6')	ø1036 mm Open (3.5') 1255 mm Open (4') 1795 mm Open (6')	ø1036 mm Open (3.5') 1255 mm Open (4') 1795 mm Open (6')
Beam Width	Horizontal	5.2°	5.2° typical (-3 dB) Adjustable between 2.6° and 5.2° (effective with RezBoost™ control)	3.9° typical (-3 dB) Adjustable between 2° and 3.9° (effective with RezBoost™ control)	2.3°/1.9°/1.35° (effective with RezBoost™ control)	2.3°/1.9°/1.35° (effective with RezBoost™ control)	2.3°/1.9°/1.35° (effective with RezBoost™ control)
	Vertical	25°	25°		22°/22°/22°	22°/22°/22°	22°/22°/22°
Antenna Rotation Speed		24 rpm	24*/36/48 rpm range coupled or 24 rpm fixed * In dual range mode, speed is limited to 24 rpm				
RF TRANSCEIVER							
Frequency		9410 ± 30 MHz	CH1: 9380 MHz (P0N), 9400 MHz (Q0N) CH2: 9400 MHz (P0N), 9420 MHz (Q0N) CH3: 9420 MHz (P0N), 9440 MHz (Q0N)				
Pulselength & PRR		S: 0.08 µs/360 Hz (0.0625 to 0.5 NM) M: 0.3 µs/360 Hz (0.75 to 2 NM) L: 0.8 µs/360 Hz (3 to 36 NM)	P0N: 0.08 µs to 1.2 µs/1100 Hz Q0N: 5 µs to 18 µs/1100 Hz		P0N: 0.04µs to 1.2µs/ 700Hz to 2000Hz Q0N: 5µs to 48µs/ 700Hz to 2000Hz		
Peak Output Power		4 kW	Solid-State, 25 W			Solid-State, 100 W	Solid-State, 200 W
Range Scales		0.0625 to 36* NM	0.0625 to 48* NM * In dual range mode, range is limited to 12 NM		0.0625 to 72* NM * In dual range mode, range is limited to 12 NM	0.0625 to 96* NM * In dual range mode, range is limited to 12 NM	
Bearing Accuracy		±1°					
INTERFACE							
Ports		LAN: 1 port, Ethernet, 100Base-TX RJ45					
ENVIRONMENT							
		Temperature: -25°C to +55°C, Waterproofing: IPX6	Temperature: -25°C to +55°C, Waterproofing: IP26		Temperature: -25°C to +55°C, Waterproofing: IP56		
POWER SUPPLY							
		12-24 VDC, 2.1-1.0 A	12-24 VDC, 2.5-1.3 A		12/24 VDC, 9.5/5.0 A	24 VDC, 5.0 A	24 VDC, 5.6 A

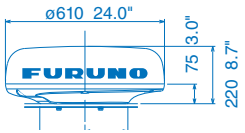
19" Radome Radar Sensor DRS4DL+ 5.7kg 12.6 lb



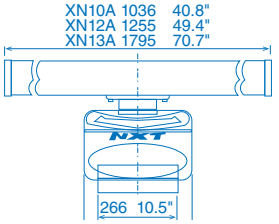
19" Radome Radar Sensor DRS2D-NXT 6.5 kg 14.3 lb



24" Radome Radar Sensor DRS4D-NXT 7.3kg 16.1 lb



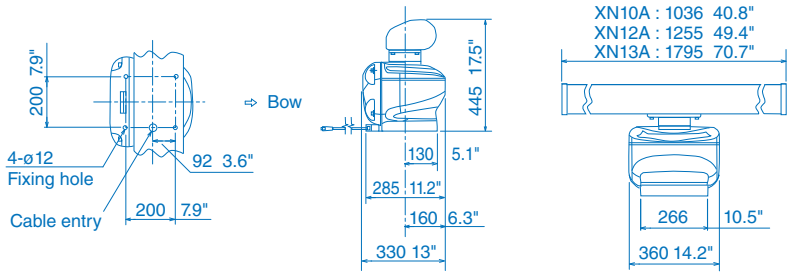
3.5 ft Open Array NXT Radar 22kg 48.5 lb
4 ft Open Array NXT Radar 25kg 55.1 lb
6 ft Open Array NXT Radar 27kg 59.5 lb



Specifications - NavNet Series Radar Continued

NavNet SERIES RADAR SENSOR continued		
DRS6A X-Class	**DRS12A X-Class**	**DRS25A X-Class**
ø1036 mm Open (3.5') 1255 mm Open (4') 1795 mm Open (6')	ø1255 mm Open (4') 1795 mm Open (6')	
2.3°/1.9°/1.35°	1.9°/1.35°	
22°/22°/22°		
24/36/48 rpm range coupled or 24 rpm fixed		
9410 ±30 MHz		
0.08 µs/3000 Hz (0.0625 to 0.75 NM) 0.15 µs/3000 Hz (1 to 1.5 NM) 0.3 µs/1500 Hz (2 NM) 0.5 µs/1000 Hz (3 to 4 NM) 0.8 µs/600 Hz (6 to 9 NM) 1.2 µs/600 Hz (12 to 64 NM) 1.2 µs/550 Hz (72 to 96 NM)		
6kW	12kW	25kW
0.0625 to 96 NM		
±1°		
LAN: 1 port, Ethernet, 100Base-TX RJ45		
Temperature: -25°C to +55°C, Waterproofing: IP56		
24 VDC, 4.0 A	24 VDC, 4.5 A	24 VDC, 5.6 A

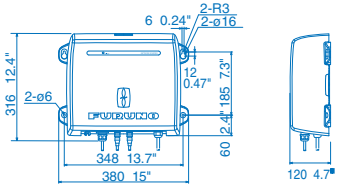
3.5 ft Open Radar Sensor DRS6A X-Class	20.0 kg 44.1 lb
4 ft Open Radar Sensor DRS6A X-Class	21.0 kg 46.3 lb
6 ft Open Radar Sensor DRS6A X-Class	23.0 kg 50.7 lb
4 ft Open Radar Sensor DRS12A X-Class	21.0 kg 46.3 lb
6 ft Open Radar Sensor DRS12A X-Class	23.0 kg 50.7 lb
4 ft Open Radar Sensor DRS25A X-Class	22.0 kg 48.5 lb
6 ft Open Radar Sensor DRS25A X-Class	24.0 kg 53.0 lb



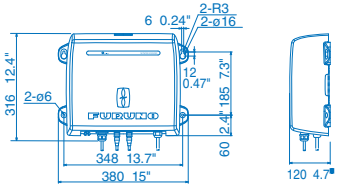
Specifications - NavNet Series Fish Finders

MODEL	NETWORK FISH FINDERS			
	DFF1-UHD	DFF3-UHD	BBDS1	DFF3
TRANSCEIVER & DISPLAY				
Display Modes	Single (High or Low frequency), Dual (Both High and Low frequencies), Bottom-lock, Bottom-Zoom, ACCU-FISH™, Bottom Discrimination, Marker Zoom, A-Scope	Single (High or Low frequency), Dual (Both High and Low frequencies), Bottom-lock, Bottom-Zoom, Marker Zoom, A-Scope	Single (50 or 200 kHz), Dual (50 and 200 kHz), Bottom-lock, Bottom-Zoom, ACCU-FISH™, Bottom Discrimination, Marker Zoom, A-scope	Single (high or low), Dual (high and low), Bottom-lock, Bottom-Zoom, ACCU-FISH™*, Marker Zoom, A-scope * with CA50/200-1T only
Frequency	Dual frequency 30-70 & 175-225 kHz	25 to 242 kHz	Dual frequency 50 and 200kHz	The synthesized transducer works with dual frequencies between 28 and 200 kHz
Broadband (CHIRP)	Available		N/A	
Range Scale	Max. 1,200m	Max. 4,572m	Max. 1,200m	Max. 3,000m
Output Power	1kW	CHIRP: Max 3kW, CW: 2kW/3kW	1kW	3kW
ENVIRONMENT				
Temperature	N/A		-15°C to +55°C	
Waterproofing	IP55		IP20	
POWER SUPPLY				
	12-24 VDC			
	30 W, 2.8-1.4 A	3.0-1.6 A	12 W, 1.1-0.4 A	30 W, 3.5 A
TRANSDUCERS (Specify when ordering)				
	1 kW Broadband transducers by AIRMAR® 42-65 kHz (low), 130-210 kHz (high) CM265LH, B265LH (with temperature sensor) CM275LHW, B275LHW	**1/2/3 kW** R109LM R109LHW R111LH PM111LM PM111LH/LHG PM111LHW PM411LWM CM599LM CM599LH/LHG CM599LHW R509LM R509LHW R599LM R599LH 165T-PM542LM 165T-PM542LHW	**600 W** 50/200 kHz: 520-5PSD (Plastic, thru-hull), 520-5MSD (Bronze, thru-hull), 525-5PWD (Plastic, transom), 525STID-MSD (Bronze, thru-hull with speed/temp sensor), 525STID-PWD (Plastic, transom with speed/temp sensor) **1 kW** (Optional Matching Box, MB1100 may be required) 50/200 kHz: 50/200-1T, 50/200-12M	**1/2/3 kW** 28 kHz: 28F-8, 28BL-6HR, 28BL-12HR 38 kHz: 38BL-9HR, 38BL-15HR 50 kHz: 50B-6/6B, 50B-9B, 50BL-12HR, 50BL-24HR 68 kHz: 68F-8H, 68F-30H 82 kHz: 82B-35R 88 kHz: 88B-8, 88B-10, 88F-126H 107 kHz: 100B-10R 150 kHz: 150B-12H 200 kHz: 200B-5S, 200B-8/8B, 200B-12H 50/200 kHz: 50/200-1T

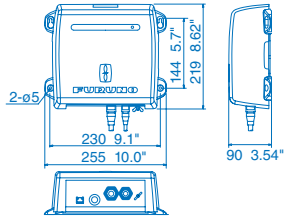
Network Fish Finder DFF1-UHD 3.2 kg 7.0 lb



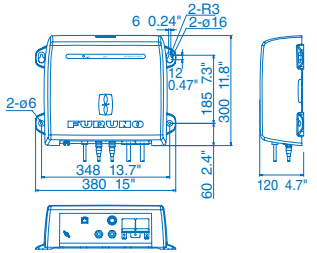
Network Fish Finder DFF3-UHD 3.6 kg 7.9 lb



Network Fish Finder/Bottom Discrimination Sounder BBDS1 1.3 kg 2.9 lb



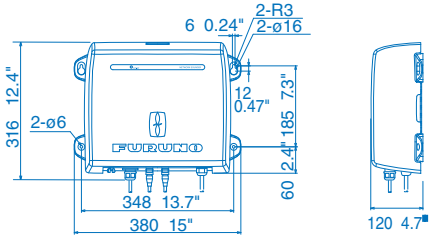
Network Fish Finder DFF3 3.8 kg 8.4 lb



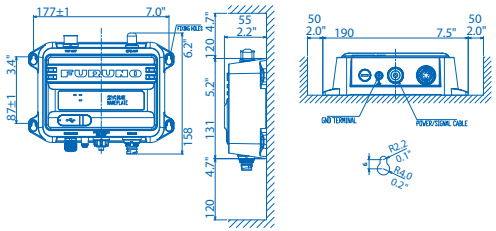
Specifications - NavNet Series Multibeam Sonar | AIS Reciever & Transponder

MODEL	NETWORK Multibeam SONAR
	DFF-3D
TRANSCEIVER & DISPLAY	
Display Mode	Cross Section, Triple/Single Beam Sounder, Side Scan, 3D Sounder History, PBG (Personal Bathymetric Generator)
Frequency	165 kHz
Beam Angle	60° Port/Stbd, 120° total
Detection Range	200 m* (Side beam best performance) 300 m* (Main beam directly under boat) * Depending on bottom type and water conditions.
Range Scale	5-1,200m
INTERFACE	
LAN	1 port, Ethernet 10/100Base-TX
External KP	1 port (optional external KP kit required)
ENVIRONMENT	
Temperature	-15°C to +55°C
Waterproofing	IP55
POWER SUPPLY	
	12-24 VDC, 1.4-0.7 A
TRANSDUCER	
	165T-B54 or 165T-SS54 (thru-hull mount), or 165T-TM54 (transom mount) Combo Transducers: 165T-50/200-SS260 (thru-hull mount), 165T-265LH-PM488 (pocket mount), or 165T-50/200-TM260 (transom mount)

Network Multibeam Sonar DFF-3D 3.0 kg 6.6 lb



FA-40/70 AIS Receiver 1.5 kg 3.3 lb



MODEL		AIS RECEIVER	CLASS-B+ AIS TRANSPONDER
		FA-40	FA-70
STANDARDS			
		IEC 60945 Ed.4 IMO MSC.140 (76) ITU-R M.1371-5, EN 303 413 V1.1.1 EN 301 843-1 V2.2.1 IEC 60945 Ed.4+CORR.1, IEC 62368-1 Ed.3	IMO MSC.140 (76) ITU-R M.1371-5, DSC: ITU-R M.825-3 IEC 62287-1 Ed.3.0, IEC 62287-2 Ed.2.0, EN 303 413 V1.1.1 EN 301 843-1 V2.2.1 IEC 60945 Ed.4+CORR.1, IEC 62368-1 Ed.3, IEC 62311 Ed.1+Ed.2
TRANSPONDER UNIT*	***FA40: RECEIVER UNIT**		
TX/RX Frequency (FA40: RX Frequency)		156.025 to 162.025 MHz	
Output Power		----	5W or 1W(SOTDMA), 2W(CSTDMA)
Channel Spacing		25 kHz	25 kHz
GPS RECEIVER			
Receiving Channels		----	12 channels, SBAS 2 channels, 14 satellites tracking
Rx Frequency		----	1575.42 MHz
Rx Code		----	C/A code
Position Accuracy		----	13 m (2 drms, HDOP <= 4)
INTERFACE			
NMEA0183	Input	ACA, ACK, AIQ, DTM, GBS, GGA, GLL, GNS, HDT, OSD, RMC, SSD, THS, VBW, VSD, VTG	ABM, ACK, AIQ, BBM, HDT, SSD, THS, VSD (ABM, BBM: SOTDMA only)
	Output	ABK, ACA, ACS, ALR, GGA, GLL, RMC, SSD, TXT, VDM, VDO, VER, VSD, VTG	ABK, ACA, ACS, ALR, GGA, GLL, RMC, SSD, TXT, VDM, VDO, VER, VSD, VTG
NMEA2000	Input	059392, 059904, 060160, 060416, 060928, 065240, 126208, 127250	059392, 059904, 060160, 060416, 060928, 065240, 126208, 127250
	Output	059392, 059904, 060928, 126208, 126464, 126992, 126993, 126996, 126998, 127258, 129025, 129026,129029, 129038, 129039, 129040, 129041, 129540, 129792, 129793, 129794, 129795, 129796, 129797, 129798, 129800, 129801, 129802, 129803, 129804, 129805, 129806, 129807, 129809, 129810, 129811, 129812, 129813	059392, 059904, 060928, 126208, 126464, 126992, 126993, 126996, 126998, 127258, 129025, 129026,129029, 129038, 129039, 129040, 129041, 129540, 129792, 129793, 129794, 129795*, 129796, 129797, 129798, 129800, 129801, 129802, 129803, 129804*, 129805, 129806, 129807, 129809, 129810, 129811, 129812*, 129813* (*SOTDMA mode only)
ENVIRONMENT			
Temperature	Antenna Unit	-25°C to +70°C	-25°C to +70°C
	Other Units	-15°C to +55°C	-15°C to +55°C
Waterproofing	Antenna Unit	IP56	
	Other Units	IP55	
POWER SUPPLY			
Transponder Unit (FA40: Receiver Unit)		12-24 VDC, 0.3.-0.2 A	12-24 VDC, 1.8-0.9 A
Display Unit:		----	----

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