

Sales Bulletin

Attention: All FURUNO Distributors/Subsidiaries

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Model: **DRS4D-NXT**

Model: **DRS6A-NXT**

Solid-State Doppler Radar Guide (Edition 2)

The models **DRS4D-NXT** and **DRS6A-NXT** are brand new **Solid-State** Radar Sensors. The **DRS4D-/6A-NXT** that uses **Doppler** signal processing technology makes it the **most intuitive navigation aid** available for the **NavNet TZtouch** and **TZtouch2** series systems. The “**NXT**” represents the “**Next Generation**” of Radar sensor advancement. It features FURUNO’s unique **State-of-the-Art Doppler signal processing**, achieved through reliable solid-state technology.

This document highlights the benefits in each field, specifications, and installation guidance of the **DRS4D-NXT** and **DRS6A-NXT**.

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1. NXT as an Intuitive Navigation Aid

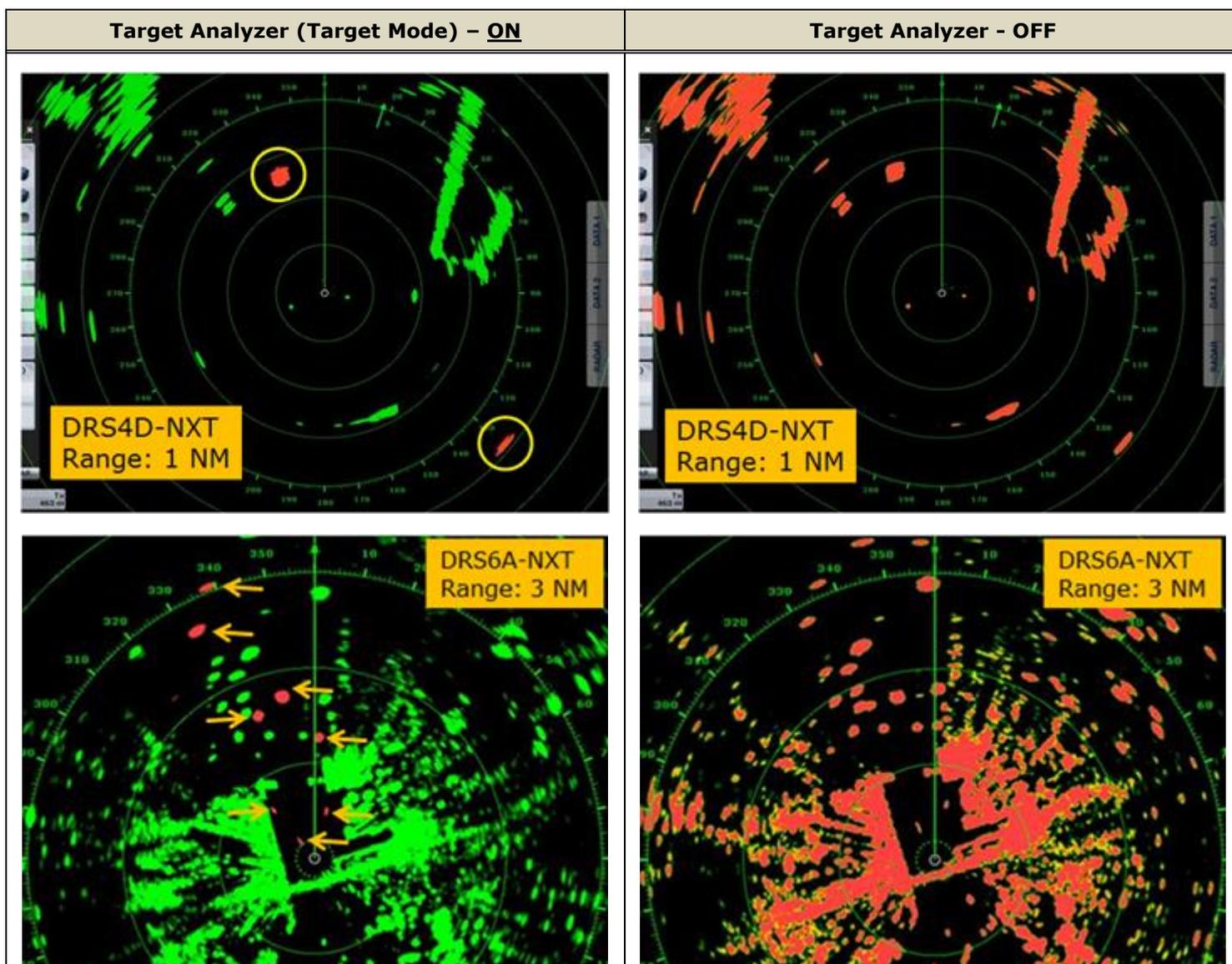
The **DRS4D-NXT** and **DRS6A-NXT** are the most intuitive navigation aids, giving you features such as **Target Analyzer**, **Automatic and Quick Target Acquire by Doppler**, and the ability to **track 100 targets at one time**.

1.1. Target Analyzer

Target Analyzer: This feature allows you to easily identify moving or important targets with two (2) helpful modes. Approaching (moving) targets, rain, and other targets are color coded to make identification easier, as outlined in the tables at right.

Target Mode	Rain Mode
Approaching targets: RED	Approaching targets: RED
Others : GREEN	Rain : BLUE
	Others : GREEN

A demonstration of the **Target Analyzer's** function is shown below, showing two (2) moving targets in **RED**.



You can identify many approaching targets depicted in red at a glance in the busy traffic area.

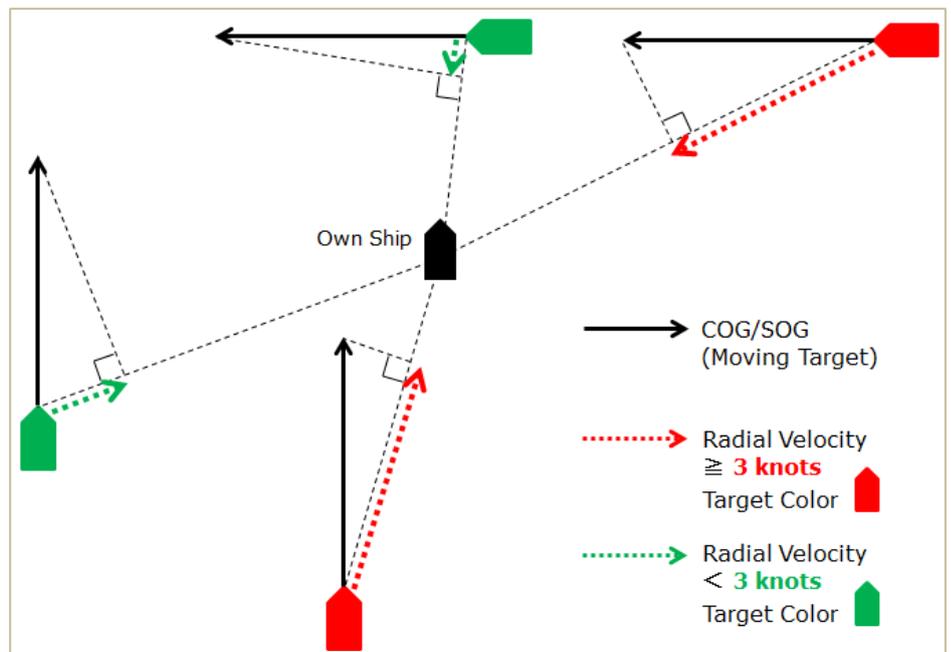
Which target(s) is/are approaching?

You cannot identify the approaching target at a glance.

Red : Approaching targets to own ship at a velocity of 3 knots or more.

Green : Other targets, i.e. stationary targets, land mass, or approaching targets, at a velocity of less than 3 knots.

The following illustration explains how the DRS4D-/6A-NXT identifies approaching targets and their speed in order to show them in either **RED** or **GREEN**. In this example, all vessels are moving at the same speed (SOG), thus having the same vector length. Considering the different courses (COG) and locations of each boat in relation to own ship, however, the velocity component to own ship (radial velocity) will be different. With **Target Analyzer**, the target with the radial velocity **3 knots and over** will be defined as approaching and shown in **RED**. Other targets, including the moving ones with the radial velocity **under 3 knots** and stationary ones, will be shown in **GREEN**. In this example, two (2) targets are shown in **RED**, alerting you to pay careful attention to those targets over the others.



Note on Target Speed Limitation

A target with the radial velocity **over 50 knots (approx.)** may be shown in **GREEN** rather **RED**.

Target Analyzer – Range Scale with DRS6A-NXT (Open Array)

The Target Analyzer function is available up to **12 NM** range scale when using the **DRS6A-NXT, open array type**. If the Target Analyzer is turned on while using the Radar in a larger range scale such as 36 NM, the range scale will be automatically adjusted to 12 NM.

Target Analyzer – No Echo Average

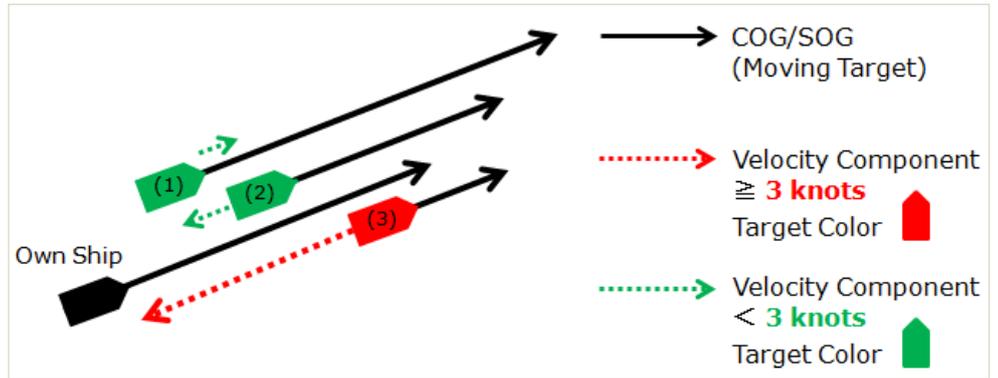
While the Target Analyzer is turned on, the **Echo Average (EAV)** function is **off, not** available.

Tips – Chasing Targets

Target Analyzer works when you follow boats from behind. As shown in the examples below, the target with the velocity component **3 knots and over** will be defined as approaching and shown in **RED**.

In the example at right, own ship is chasing three (3) vessels.

RED and **GREEN** dotted arrows show the difference between the speed of own ship and the other targets.



Target	Color	Descriptions
(1)	GREEN	Own ship is moving slower than this target.
(2)	GREEN	Own ship is moving slightly faster than this target, thus the velocity component to own ship is under 3 knots.
(3)	RED	Own ship is moving much faster than this target, thus the velocity component to own ship is over 3 knots.

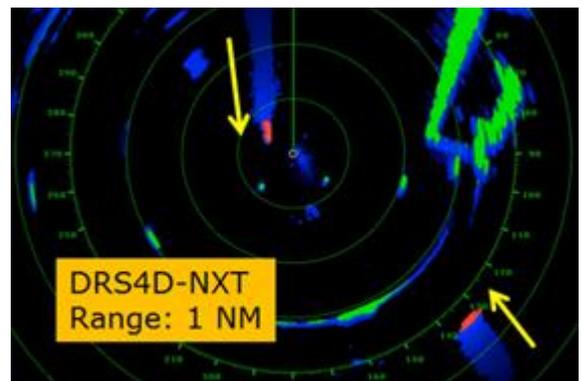
Advanced Operation 1 – Echo Trail

When utilizing a combination of the **Target Analyzer** and **Echo Trails**, target movement and direction are made clearly visible in color, e.g. **BLUE**. An example is seen at right.

Sample Screen

Target Analyzer – **Target Mode: ON**

Echo Trail: **ON**



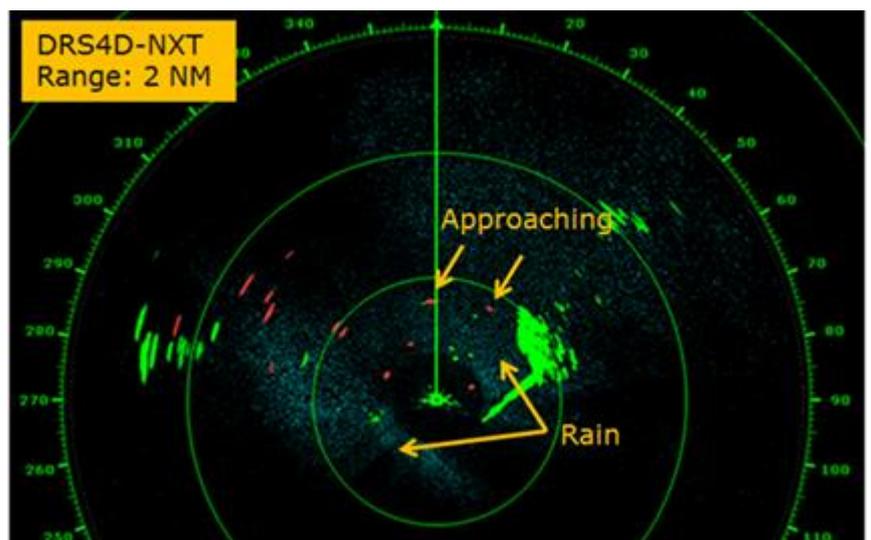
Advanced Operation 2 – Rain Mode

Unique Doppler signal processing offers another benefit: The **Rain Mode** is the other mode of **Target Analyzer** that differentiates rain and targets in colors. As shown in the example at right, it is useful to identify approaching targets (**RED**) under the rain (**BLUE**).

Sample Screen

Target Analyzer – **Rain Mode: ON**

Echo Trail: **OFF**



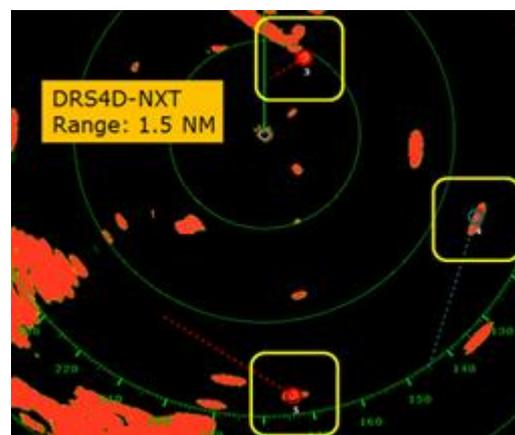
See **Sales Bulletin FSB17-0019** for details on Rain Mode.

1.2. Auto Acquire by Doppler

With the conventional **ARPA Target Tracking** feature, target acquisition and tracking were done automatically, but only within a set guard zone. The DRS4D-/6A-NXT, however, is different. Thanks to Doppler signal processing, **targets in any direction within a 3 NM range can be automatically acquired and tracked**. The table below compares the differences between the new **Auto Acquire by Doppler** and conventional target tracking.

Items	DRS4D-/6A-NXT	Conventional Models
Auto Acquisition in Guard Zone	Available	Available
Auto Acquire by Doppler	Acquiring approaching targets within 3 NM Velocity component: Over 3 knots as shown in Section 1.1	NOT available

In the example at right, targets **within 3 NM** are acquired and tracked automatically. Their velocity components are over **3 knots** as discussed in [Section 1.1](#). The vector lines from the **ARPA Target Tracking** symbols show the directions in which the targets are moving. In addition to echo trails, the **Auto Acquire by Doppler** feature allows the operator to see the approaching target's direction in relation to own ship.

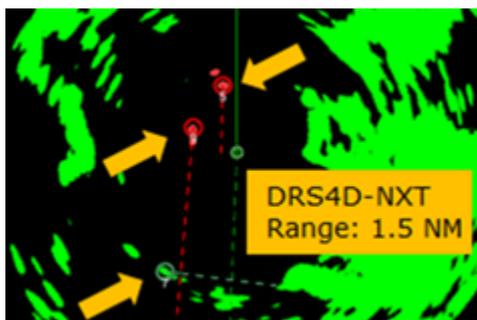
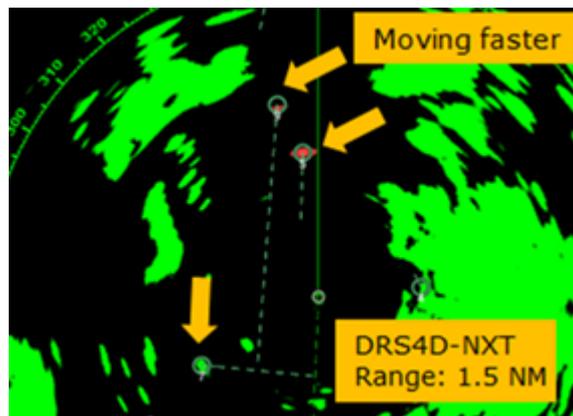


Note:

This feature uses **RED** and **GREEN** target symbols. Targets that have triggered the **CPA/TCPA** alarm are shown in **RED** much like conventional **ARPA Target Tracking**.

Advanced Operation – Combination with Target Analyzer

Combination of Target Analyzer with Auto Acquire by Doppler enables the ability to show approaching targets in **RED** with the vector of automatically tracked targets, so that the moving direction of surrounding targets can be more easily identified. The vector length representing the speed element also helps to identify targets approaching fast. In the example at right, two (2) targets are heading to own ship, while the target at left is expected to go across behind



own ship. The example at right shows that two (2) targets are approaching. You can see that the target with the longer vector is approaching faster.

In addition, with the CPA/TCPA alarm set to on, acquired targets expected to approach within a preset range are shown in red symbols to alert you, as shown in the example at left.

Note on Target Speed Limitation

The target with the velocity component **over 50 knots (approx.)** may **NOT** be automatically acquired.

Note on Default Setting

The Auto Acquire by Doppler function can be activated or deactivated in [Menu] (TZT9/14/BB) / [Settings] (TZTL12F/15F) – [Radar] – [**Auto Acquire by Doppler**] – [ON] / [OFF].

With the **DRS6A-NXT**, the default setting is [ON]. An update from v1.03 to **v1.04** is planned for the **DRS4D-NXT** to make the default setting [ON].

1.3. Quick Target Acquisition and 100 Target Tracking

Since the Target Analyzer and Auto Acquire by Doppler features are utilizing the Doppler signal processing, the DRS4D-/6A-NXT can detect target motion instantly. This also helps the DRS4D-/6A-NXT to track as many as **100 ARPA targets: 40 targets for Auto Acquire by Doppler, 30 targets for automatic tracking in guard zone, and 30 targets for manual tracking**. These targets can be either manually or automatically acquired within a few seconds.

Note:

The other DRS series Radar sensors can only acquire a maximum of **30 targets**.

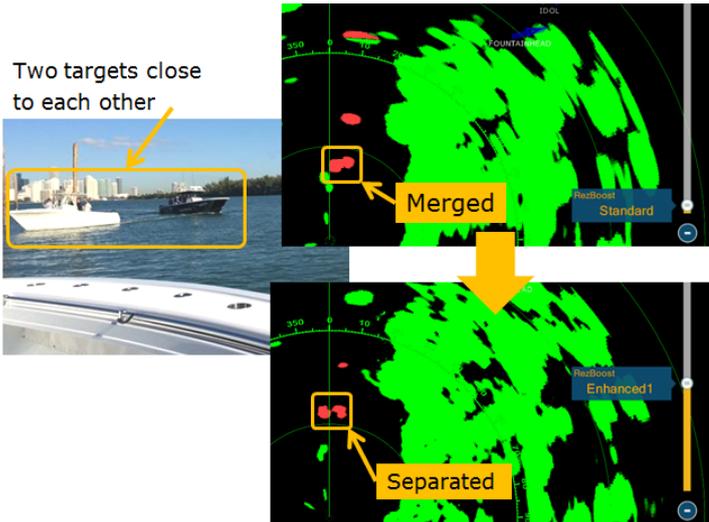
2. Advanced Presentation

2.1. RezBoost™

FURUNO's new **RezBoost™** processing technology that was developed for the new FCV-628/588 Fish Finders and the built-in Fish Finder used in the TZTL12F/15F has been applied to enhance Radar echoes starting from the dome type model **DRS4D-NXT**, followed by **DRS6A-NXT**.



Achieving equivalent bearing resolutions for longer antenna arrays is possible by suppressing unnecessary echoes.



How is the echo sharpened?

Step 1 – Detect location(s)

Identify the object location(s).

Step 2 – Sharpen echo

Side echoes are slimmed to improve the target echo resolution on the screen.

This makes Radar images **2 times sharper** than conventional Radar, so that close targets can be separately shown on the screen. On the other hand, there are some cases where conventional fat echoes are preferred. To this end, four (4) different mode selections are available: **Standard**, **Enhanced 1**, **Enhanced 2**, and **Enhanced 3**. The following screenshots show how echoes are enhanced in each of these modes.

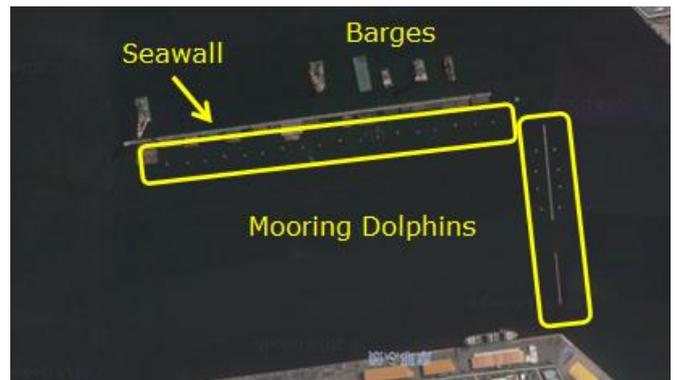
Location

Off the coast of Kobe, Japan:

There are many separated targets located next to each other to show the difference in echo resolution.

Note:

The antenna XN12A (4 ft) was used for open array.

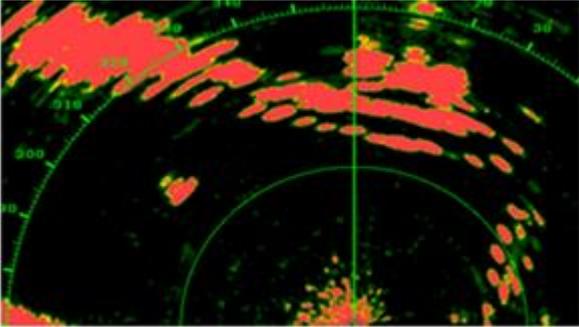
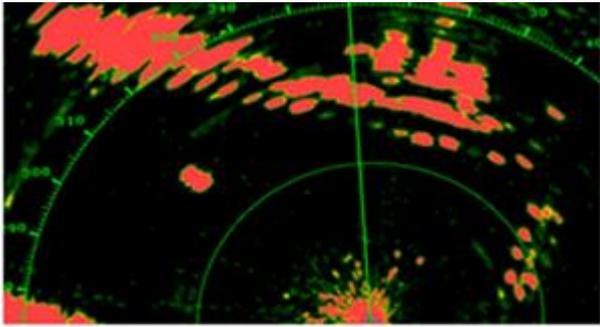
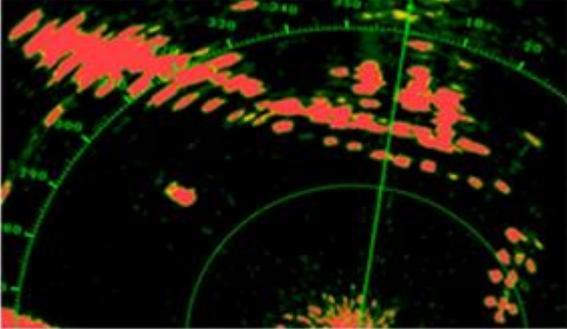
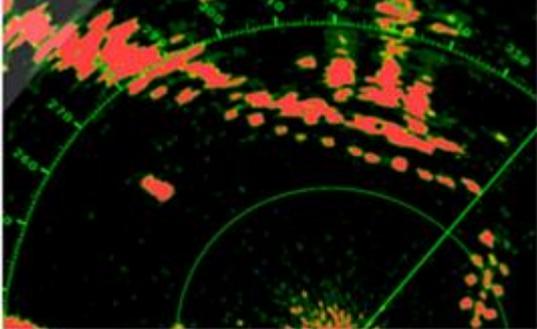


Summary

- (1) The **DRS4D-NXT** displays **clearer resolutions in RezBoost™ modes** separating mooring dolphins. The difference from the Standard mode is significant. (See **Case 1**)
- (2) The **DRS6A-NXT Standard mode** and DRS6A X-Class shows good, reasonable resolutions due to longer antenna length than dome types. (See **Case 2.1**)
- (3) However, the **DRS6A-NXT RezBoost™ modes** starts showing all the mooring dolphins separately with improved resolutions. (See **Case 2.2**)

Case 1 – Comparison by RezBoost™ Modes with DRS4D-NXT

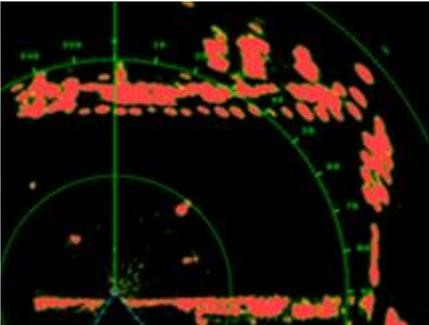
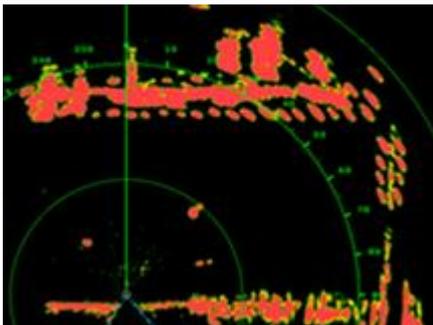
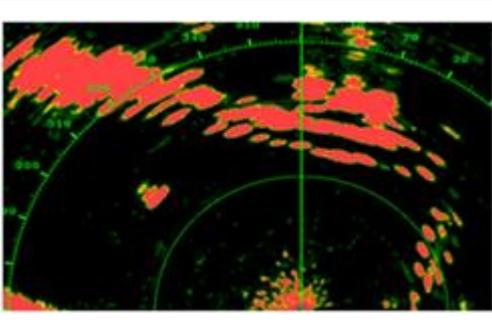
Range: 0.5 NM

Standard	Enhanced 1
 <p data-bbox="272 660 592 689">Conventional echo images</p>	 <p data-bbox="919 636 1382 712">Sharper than Standard by 1.2 times: Equivalent to 3.4° beam width</p>
Enhanced 2	Enhanced 3
 <p data-bbox="188 1122 651 1198">Sharper than Standard by 1.5 times: Equivalent to 2.7° beam width</p>	 <p data-bbox="930 1122 1366 1198">Sharper than Standard by 2 times: Equivalent to 2.0° beam width</p>

Case 2.1 – Before Comparison by Standard Modes with DRS6A-NXT

Before comparing the DRS6A-NXT RezBoost™ modes, the following table shows what the standard echoes look like with the **DRS6A-NXT (Standard)**, **DRS6A X-Class (NO RezBoost™ function)**, and **DRS4D-NXT (Standard)**. You can see that both the DRS6A-NXT (Standard) and DRS6A X-Class show the similar resolution, superior to the dome type DRS4D-NXT due to longer antenna length. The RezBoost™ starts clearly showing mooring dolphins separately in Case 2.2.

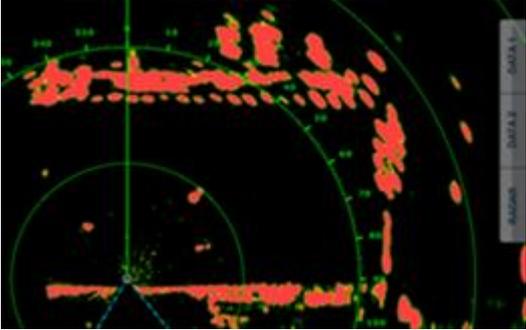
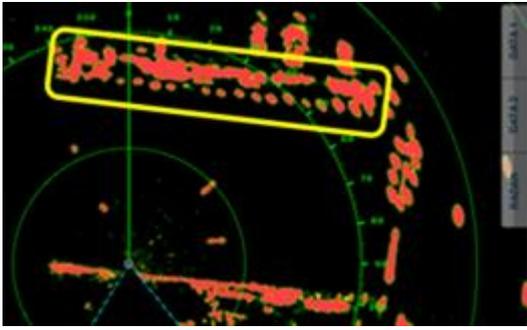
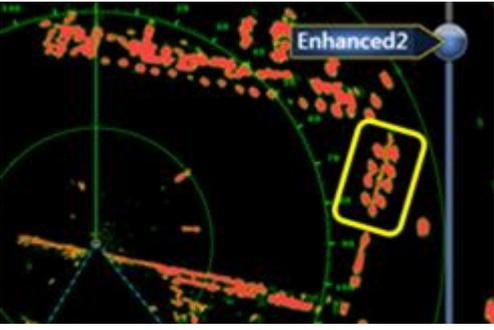
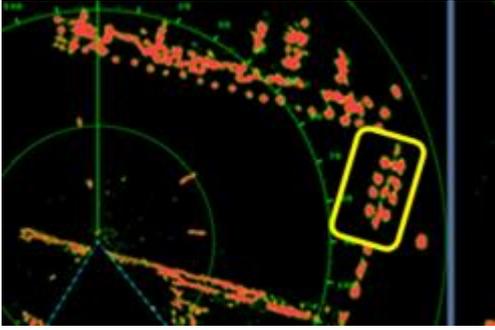
Range: 0.5 NM

<u>DRS6A-NXT (Standard)</u>	DRS6A X-Class	<u>DRS4D-NXT (Standard)</u>
		

Case 2.2 – Comparison by RezBoost™ Modes with DRS6A-NXT

Now, the RezBoost™ modes of DRS6A-NXT are compared. You can see the resolutions gradually improve.

Range: 0.5 NM

Standard	Enhanced 1
 <p data-bbox="81 757 400 786">Conventional echo images</p>	 <p data-bbox="810 730 1382 808">Sharper than Standard by 1.2 times: Dolphins at top start showing good separation.</p>
Enhanced 2	Enhanced 3
 <p data-bbox="81 1216 668 1294">Sharper than Standard by 1.5 times: Dolphins at right start showing good separation.</p>	 <p data-bbox="810 1216 1267 1294">Sharper than Standard by 2 times: Dolphins are separated more sharply.</p>

Note:

When RezBoost™ is set to higher value such as [Enhanced 3], echoes from thin targets such as seawalls may look partially interrupted while sharpening the echoes too highly. Make sure to find the most appropriate setting depending on the conditions.

2.2. Bird Mode

In combination with the DRS4D-/6A-NXT and updated NavNet TZtouch and TZtouch2 MFDs, the **Bird Mode** is available. The **Gain** settings will be set to **higher** values to **enhance echoes** and **detect birds**.

3. Specifications

3.1. Comprising

Standard Comprising

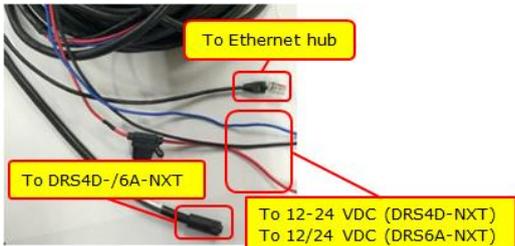
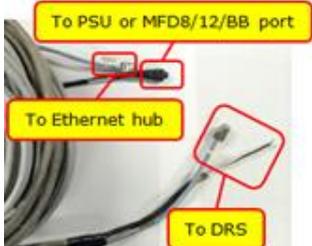
DRS4D-NXT			DRS6A-NXT		
Comprising	Models	Remarks	Comprising	Models	Remarks
Radar Sensor	DRS4D-NXT	Less cable *(1)	Scanner Unit	RSB-137-119-E	Less cable/ant. *(1) (2)
Including:	Installation materials and accessories		Including:	Installation materials and accessories	

Notes:

(1) Cables should be ordered separately. Different cable lengths available are 10 m, 15 m, 20 m, and 30m.

(2) Antennas should be ordered separately. Different antennas available for DRS6A-NXT are XN10A, XN12A, and XN13A

Cable Type FRU-2P5S-FF-xxM

DRS4D-/6A-NXT	Comparison with Conventional DRS
FRU-2P5S-FF-10M FRU-2P5S-FF-15M FRU-2P5S-FF-20M FRU-2P5S-FF-30M *(1)	 <p>To Ethernet hub</p> <p>To DRS4D-/6A-NXT</p> <p>To 12-24 VDC (DRS4D-NXT) To 12/24 VDC (DRS6A-NXT)</p>
	 <p>To PSU or MFD8/12/BB port</p> <p>To Ethernet hub</p> <p>To DRS</p>
	MOD-ASW000 <u>1</u> -100+, -150+, -200+, -300+ (for 2 to 12 kW) MOD-ASW000 <u>2</u> -100+ -150+, -200+, -300+ (for 25 kW)

Notes:

(1) The model name of **DRS4D-NXT** cable is **FRU-2P5S-FF-xxM**. On the other hand, the model indication of **DRS6A-NXT** cable is **CP03-37700/10/20/30**, which contains the cable type **FRU-2P5S-FF-xxM** as well as **10 A and 15 A fuses** and **fuse labels**. Note that the cable type **FRU-2P5S-FF-xxM** is commonly used with the DRS4DL, DRS4D-NXT, DRS6A-NXT, and DRS6A/12A/25A X-Class. **With the DRS6A-NXT, use an appropriate fuse for ship's mains and cable length.** See [Section 4.5](#) for details.

(2) The conventional DRS2D/4D/4A/6A/12A cable **MOD-ASW0001-xxx+** can also be used with the **DRS4D-NXT** to cope with retrofits from the DRS2D/4D. Refer to [Section 4.4](#) for details.

(3) The conventional DRS2D/4D/4A/6A/12A cable **MOD-ASW0001-xxx+** or DRS25A cable **MOD-ASW-0002-xxx** **CANNOT** be used with the DRS6A-NXT for voltage drops. Refer to [Section 4.6](#) for details.

3.2. Comparison – Dome

General and I/O	FURUNO DRS4D	FURUNO DRS4D-NXT
Transmitter	Magnetron	Solid-state, NO startup time
Transmission	Pulse	Pulse compression
Output Power	4 kW	25 W
Dome Size	24 in	24 in
Power Supply	48 VDC via PSU/MFD (12-24 VDC)	12-24 VDC via ship's mains
Power Consumption (TX)	24 W	24 W
Weight	7 kg	7.3 kg
Protection Level	IP26	IP26
Compatible Display/Version*(1)	NavNet 3D, TZtouch, and TZtouch2 MFDs	NavNet TZtouch and TZtouch2 MFDs
NMEA2000 Port	Available	N/A
Performance		
Effective Horizontal Beam	3.9°	2.0 to 3.9° (RezBoost™)
Horizontal Beam Width	3.9°	3.9°
Vertical beam Width	25°	25°
Antenna Rotation Speed	24/36/48 RPM	24/36/48 RPM
Maximum Range	36 NM	48 NM (v1.05 and later)
Minimum Detection Range	25 m	20 m
Range Resolution	20 m	20 m
SART, RACON	Available	Within 0.5 to 1 NM *(2)
Dual Range	Available	Limited *(2)
ARPA Target Tracking	30 targets	100 targets (40 × Doppler, 30 × Guard Zone, 30 × Manual)
Target Analyzer	N/A	Yes

Note:

- (1) See [Section 6.2](#) for details on compatible TZT9/14/BB and TZTL12F/15F software versions.
- (2) See [Section 6.1](#) for limited functions.
- (3) See [Section 3.4](#) for more descriptions.

3.3. Comparison – Open Array

General and I/O	FURUNO DRS6A-NXT
Transmitter	Solid-state
Transmission	Pulse compression
Output Power	25 W
Antenna Size	3.5 ft (XN10A), 4 ft (XN12A), 6 ft (XN13A)
Power Supply	12/24 VDC from ship's mains
Power Consumption (TX)	50 W
Weight	With XN12A: 20.3 kg With XN13A: 22.3 kg
Protection Level	IP56
Compatible Display/Version ^{*(1)}	NavNet TZtouch and TZtouch2 MFDs
Performance	
Effective Horizontal Beam	With XN10A: 1.15 to 2.3° With XN12A: 0.95 to 1.9° With XN13A: 0.7 to 1.4° (by RezBoost™)
Horizontal Beam Width	XN10A (3.5 ft) : 2.3° XN12A (4 ft) : 1.9° XN13A (6 ft) : 1.4°
Vertical Beam Width	22°
Antenna rotation speed	24/36/48 RPM
Max. Range Setting on MFD	72 NM
Minimum Detection Range	10 m
Range Resolution	10 m
SART, RACON	Within 0.5 to 1 NM ^{*(2)}
Dual Range	Limited ^{*(2)}
ARPA Target Tracking	100 targets (40 × Doppler, 30 × Guard Zone, 30 × Manual)
Target Analyzer	Yes (Up to 12 NM range)

Note:

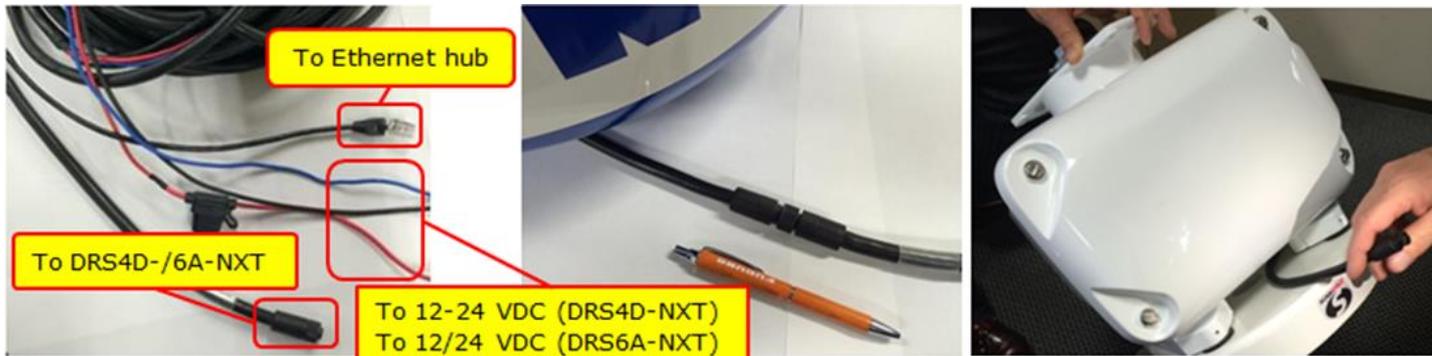
(1) See [Section 6.2](#) for details on compatible TZT9/14/BB and TZTL12F/15F software versions.

(2) See [Section 6.1](#) for limited functions.

(3) See [Section 3.4](#) for more descriptions.

4.2. Cabling

The DRS4D-/6A-NXT cable consists of power and Ethernet cables like the DRS4DL and DRS6A/12A/25A X-Class. These two (2) lines are split at the end of the cable. The other end is fitted with an MJ-style plug for connection to the pigtail cable hardwired to the DRS4D-/6A-NXT. The power line has a flat fuse case for easier replacement.



Left: Cable / Middle: Cable to DRS4D-NXT / Right: Cable to DRS6A-NXT



Left: Fuse case

4.3. Interconnection

Interconnection is quite easy. Just connect the cable to the NavNet TZtouch or TZtouch2 Ethernet network and ship's mains: 12-24 VDC for DRS4D-NXT or 12/24 VDC for DRS6A-NXT. See [Section 5.1](#) for details.



4.4. DRS4D-NXT Only – Utilizing Conventional DRS Cable for Retrofit

The conventional DRS2D/4D/4A/6A/12A cable **MOD-ASW0001-xxx+** can also be used with the DRS4D-NXT to assist with a retrofit from an existing DRS2D/4D. With the replacement kit **OP03-239 (001-426-250-00)**, the gap in the cable hole at the rear dome will be filled.

Pigtail Cable Fit at Factory	Existing MOD-ASW0001-xxx+ Used	Descriptions
		<p>The pigtail cable fit at the lower dome at the factory consists of a single cable. The two (2) holes for two (2) cables of MOD-ASW0001-xxx+ are filled with the OP03-239.</p>

Limitations on Cable Length

When utilizing the existing DRS2D/4D/4A/6A/12A cable **MOD-ASW0001-xxx+**, note that there are limitations of a total cable length as shown in the table at right.

Power Supply	Cable Length (Power Line)
12 VDC	Less than 10 m
24 VDC	<u>NO</u> limitation

While the DRS2D/4D/4A/6A/12A requires 48 VDC with the cable model **MOD-ASW0001-xxx+** that has conductors of a **smaller** gauge, the DRS4D-/6A-NXT cable is different. The DRS4D-/6A-NXT requires 12-24 VDC with the cable model **FRU-2P5S-FF-xxM** that has conductors of a **larger** gauge. Considering the possible voltage drop due to smaller conductors, the total cable length is limited.

4.5. DRS6A-NXT Only – Cable Length Limitations

The **DRS6A-NXT** cable comes with **10 A** and **15 A** fuses. Depending on the ship's mains (supply voltage), applicable fuse types and cable lengths are different as shown in the following table. **Note that the maximum cable length supported is 10 m with the 12 VDC supply.**

Ship's Mains (Supply Voltage)	Cable Length			
	10 m	15 m	20 m	30 m
12 VDC	15 A	NOT supported	NOT supported	NOT supported
24 VDC	10 A	10 A	10 A	10 A

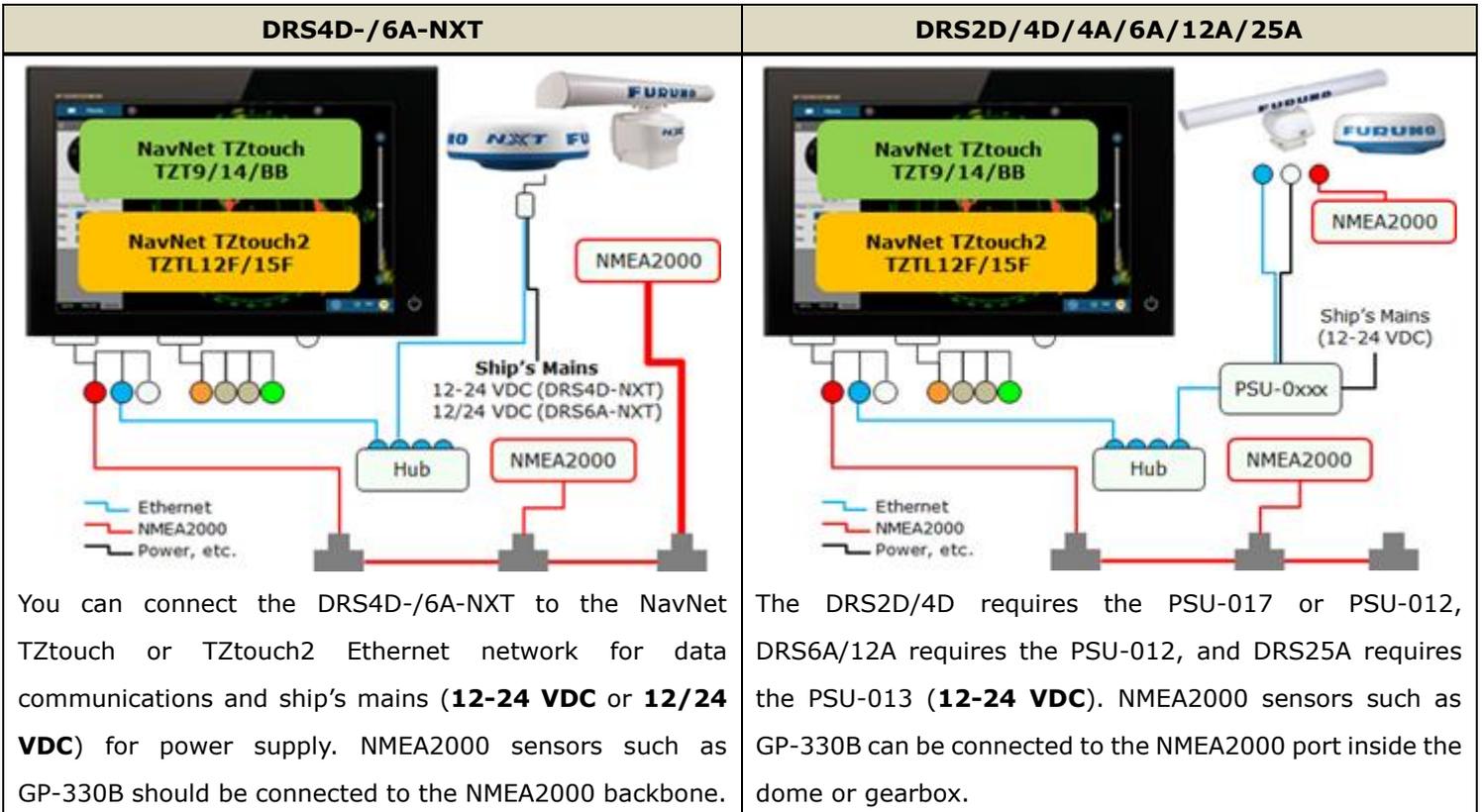
4.6. DRS6A-NXT Only – No Compatibility with Conventional DRS Cable

The conventional DRS2D/4D/4A/6A/12A cable **MOD-ASW0001-xxx+** or DRS25A cable **MOD-ASW-0002-xxx** **CANNOT** be used with the **DRS6A-NXT**. While the conventional DRS requires 48 VDC with the cables that have conductors of a **smaller** gauge, the DRS6A-NXT cable is different. The DRS6A-NXT requires 12-24 VDC with the cable **FRU-2P5S-FF-xxM** (included in CP03-377xx) that has conductors of a **larger** gauge. Considering the possible voltage drop due to smaller conductors, **the new cable FRU-2P5S-FF-xxM (included in CP03-377xx) should be used for the DRS6A-NXT.**

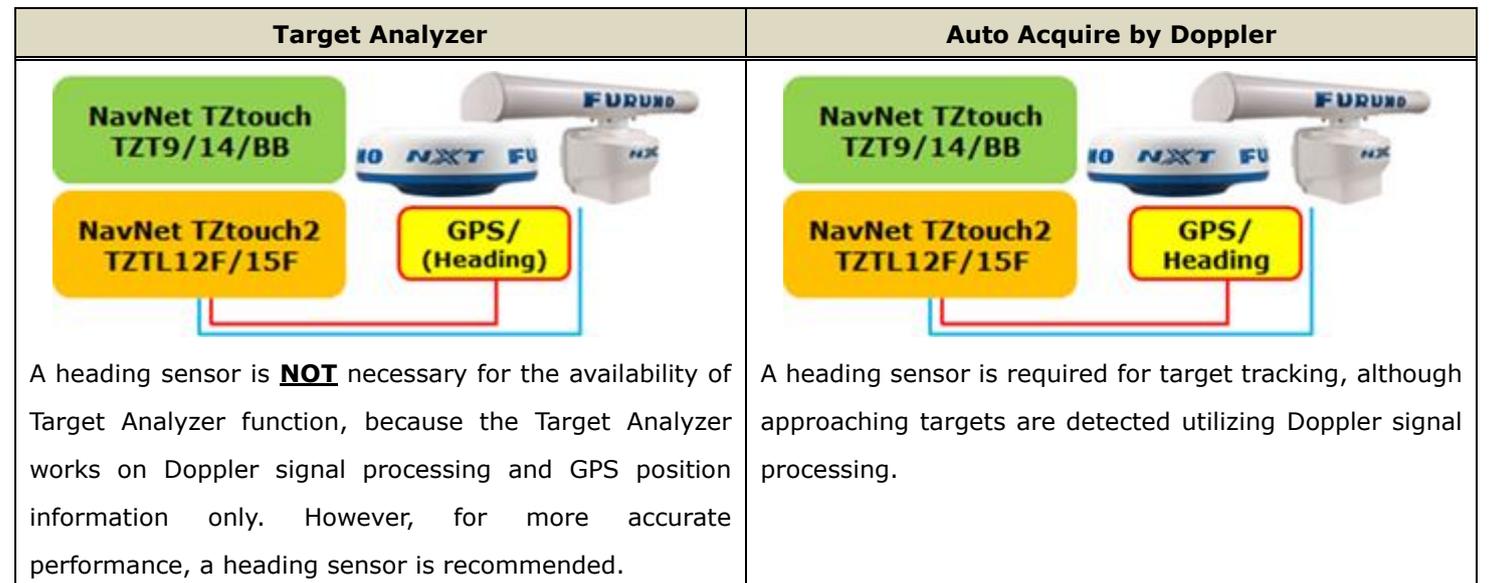
5. Creating DRS4D-/6A-NXT Package

5.1. Basic Configuration

The following drawings show the basic network in comparison with the DRS2D/4D/4A/6A/12A/25A.



5.2. Requirement of GPS and Heading Sensor



6. Notes

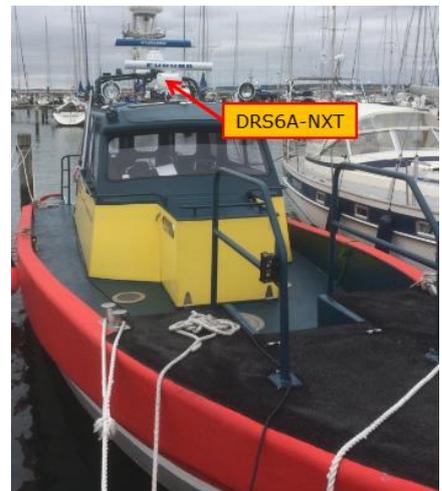
6.1. Limited Functions

SART and RACON Detection

SART and RACON can be detected within 0.5 to 1 NM. The output power of 25 W from the DRS4D-/6A-NXT is not enough to activate SART and RACON in a 36 NM range.



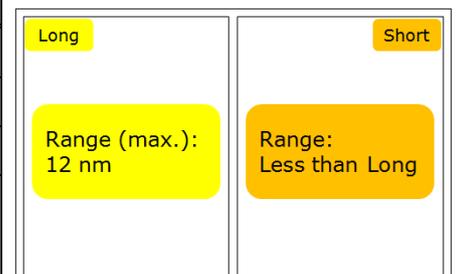
From Sweden in September 2017: The boat equipped with DRS6A-NXT succeeded in detecting SART around 1 to 1.2 NM from own vessel. (The DRS6A-NXT echo images were shown on a TIMEZERO Professional PC.)



Dual-Range Display

In the dual-range display mode, there are the following limitations.

Items	Limitations
Maximum range	Up to 12 NM
Antenna rotation speed	24 RPM only
Gain / Interference	NOT independent
Combination of different display modes	NOT available: The screens are in the same display mode, i.e. Bird Mode + Bird Mode, Target Analyzer + Target Analyzer



6.2. Compatible Displays and Versions

The DRS4D-/6A-NXT is compatible with the **TZT9/14/BB (NavNet TZtouch)** and **TZTL12F/15F (NavNet TZtouch2)**, **NOT compatible with MFD8/12/BB (NavNet 3D)**. Make sure that the displays are updated to be compatible with the DRS4D-/6A-NXT.

Displays	Versions	Compatibility
NavNet 3D (MFD8/12/BB)	NOT supported	-
NavNet TZtouch (TZT9/14/BB)	V4.21 or later	DRS4D-NXT , DRS6A X-Class
	V 5.01 or later	DRS6A-NXT , DRS12A/25A X-Class
	V 6.01 or later	DRS4D-NXT v1.05 for 48 NM range scale
NavNet TZtouch2 (TZTL12F/15F)	V 3.01 or later	DRS4D-NXT , DRS6A X-Class
	V 4.01 or later	DRS12A/25A X-Class
	V 5.01 or later	DRS6A-NXT
	V 6.21 or later	DRS4D-NXT v1.05 for 48 NM range scale

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History

Release	Date	Page	Section	Descriptions
FSB17-0015	Aug. 7, 2017	-	-	-
Rev. 1	Sep. 21, 2017	7	1.2	Note on default setting of Auto Acquire by Doppler function is added.
Rev. 2	Oct. 18, 2017	18	3.2	Indication of "Bearing Resolution" is changed to "Effective Horizontal Bearing".
		12	3.3	Indication of "Bearing Resolution" is changed to "Effective Horizontal Bearing".
		18	6.1	Example of SART detection in Sweden is added.
FSB19-0012 (Edition 2)	May 29, 2019	4	1.1	Notes on the maximum range scale (12 NM) of DRS6A-NXT and EAV availability for Target Analyzer are added.
		8	2.1	Description of RezBoost is elaborated: "How is the echo sharpened?" is added.
		12	3.2	48 NM range scale with DRS4D-NXT v1.05 and later is added in the specification table. Simrad HALO24 and Raymarine Quantum 2 are added in the specification table. Some specifications are updated to the latest information.
		13	3.3	48 NM range scale with DRS4D-NXT v1.05 and later is added in the specification table. The maximum range scale (12 NM) of DRS6A-NXT for Target Analyzer is added. Garmin Fantom 54/56/124/126 are added in the specification table. Some specifications are updated to the latest information.
		14	3.4	Tips on output power of Garmin Fantom series are added.
		19	6.2	Software versions of MFDs compatible with 48 NM range scale with DRS4D-NXT v1.05 are added.