

# NETWAVE NW-6000 SERIES VOYAGE DATA RECORDERS

More than 5,500 vessels rely on us...

netwave



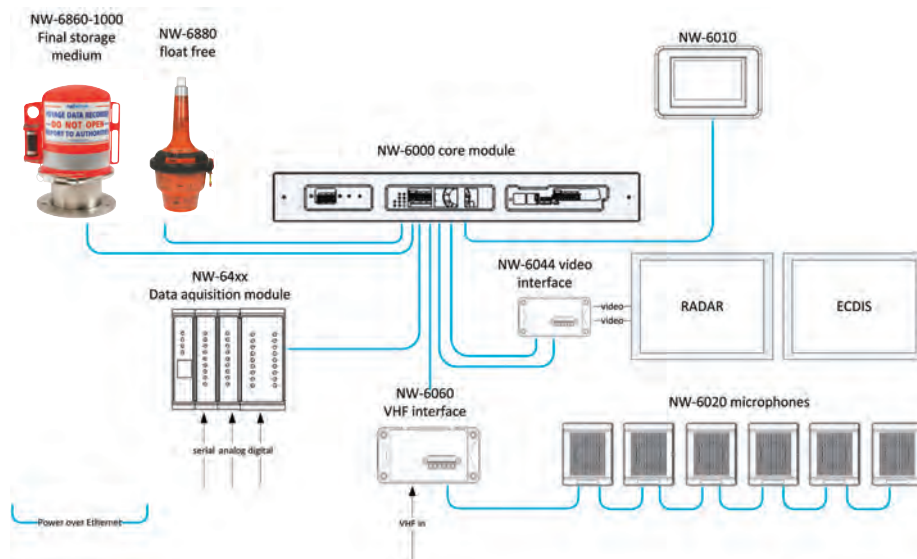
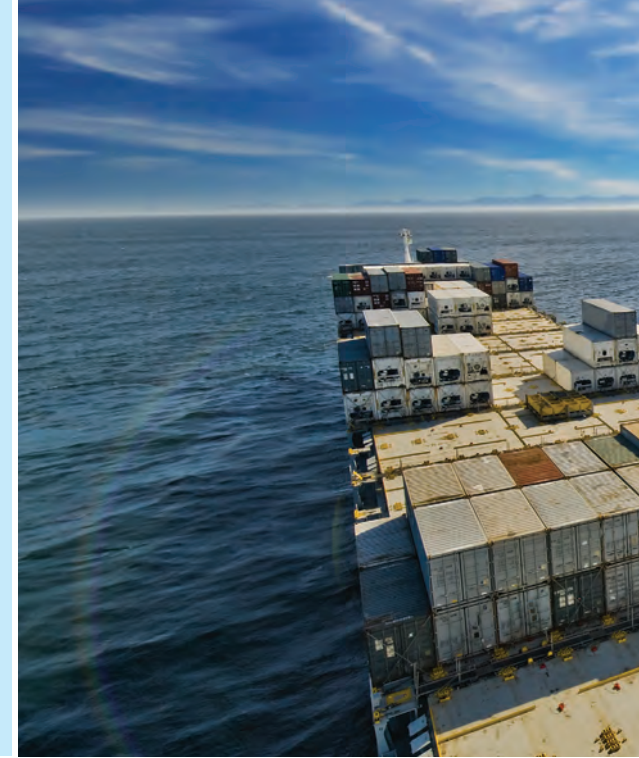
# DESIGNED FOR THE MARITIME ENVIRONMENT

With over 5,500 vessels currently sailing with Netwave's Voyage Data Recorder solutions, the company is the most qualified VDR designer and manufacturer in the maritime industry. NetWave's VDR systems are specifically designed to provide rigidity and to overcome service issues arising in the maritime environment.

**Reliable,  
secure and  
cost-effective**

The Netwave VDR has a versatile design. It can be installed in a 19" rack or can be supplied in a bulkhead mounted casing. It can either be placed inside the navigation console or against any flat surface. Because of its Power-Over-Ethernet design, cable running is reduced to the minimum.

The benefit is faster (and therefore more economical) installation and ease of service. Because of the special design, the Netwave VDR can easily be adapted for any type of newbuilding installations as part of IBS, or being used to replace older VDR solutions.



## SYSTEM CONFIGURATION

### *IEC61162-450 (Lightweight Ethernet) Infrastructure*

Contrary to most other systems on the market, NetWave's NW-6000 VDR system architecture is unique in the fact that the various components throughout the ship are interconnected by means of one single Ethernet cable. Both Power and Data are provided over this very same single cable, eliminating the need for extensive and complex, and therefore costly, cabling requirements. Compared to other VDR systems, cabling costs are typically reduced by 50%!

The NetWave VDR and (S)VDR systems consist of the following components:

- NW-6860-1000 Fixed Capsule
- NW-6880 Float free Capsule
- NW-6000 Core Module
- NW-6010 Bridge Control Unit
- NW-64xx Data Acquisition Module
- 6 x NW-6020/6021 microphones
- NW-6060 VHF Interface



# FINAL RECORDING MEDIA

## NW6860-1000 Fixed Capsule for VDR & SVDR

Netwave has originally developed, and is manufacturing its own 'fixed' capsules for over 10 years now. The capsule is still unique in the marketplace today in the sense that in spite of the integration of the Central Processing Unit and Data Storage Server onto a single chip within the armored stainless steel capsule, this autonomous system is run from a single Ethernet cable leading to the compass deck.

NetWave capsules are not only deployed in conjunction with a NetWave VDR system but also the FRM of choice used by other VDR manufacturers.

NetWave's capsules are the only capsules in the market completely made from A316 grade stainless steel. As per the supply standard this 'fixed' Final Recording medium is fitted with NetWave's Underwater Locator Beacon compliant to the SAE8045AS standard.

Compliant to IMO resolution A.333(90) for VDR systems, IEC61996, IEC60945 and ED56/112:

- Fire resistant to 1100 °C @ 1 hour and 260 °C during 10 hours.
- Data memory pressure cylinder resistant to 20.000 PSI/600 Bar/6000 meters depth during extended periods.
- Color: RAL 3026 (Fluor red) for SOLAS compliant ships. (other RAL colors available upon request)
- Stainless steel A316 deck mount with optional welding plate delivered within standard package.
- Memory 32/64/128 GB (Protected) for incident recording. Minimum of 48 hours
- Totally Solid State, no disk drives or other moving parts.
- Dimensions:
  - W: 260 mm
  - H: 411 mm
  - D: 260 mm
  - W: 18 KG



# FLOAT FREE CAPSULE

## NW-6880 Float free capsule for VDR

The Tron 40 VDR is the most reliable 'float free' capsule in the market today. To emphasize the strong position of the NW-6000 in the market, Netwave is working in a close relation with Jotron to obtain the most reliable solution for the recording in a float free capsule, connected to the Core Module via one single cable (PoE) only!

Compliant to IMO resolution A.333(90) for VDR systems, IEC61996, IEC60945 and ED56/112:

- Memory to record 48 hours
- PoE interface
- Powered directly from the Core module
- Dimensions:
  - W: 240 mm
  - H: 533 mm
  - D: 218 mm
  - W: 4.4 KG

# CORE MODULE

## NW-6000 Core Module

This efficient, uninterruptible power supply and network switch is designed with installation time-and-space in mind and offers scalability up to the largest vessel. It provides a high degree of plug and play interconnection.

- 220V AC (nominal) at 3 Amps
- 1/10 Gb bandwidth on 12 Ethernet ports
- Power over Ethernet (on 8 of 12 ports)
- Gateway (FBB, VSAT) capabilities without additional interfacing requirements
- Fail-over, bypass, non-intrusive network device
- Integrated UPS

- 19" & bulkhead versions available
- Dimensions:
  - W: 450 mm
  - H: 484 mm
  - D: 44.5 mm
  - W: 9,5 KG

# BCU

## NW-6010 Bridge Control Unit

The ultimate solution to user-friendly, easy to understand operation, this unit provides direct function access as well as remote system diagnostics, enabling any crewmember to find his way around without the need for any training.

Typically mounted within the bridge console, it continuously shows crystal clear unambiguous messages about what's going on within the VDR. With its touch screen, you can select instant replay or scroll through the Menu for analysis.

- Touch Screen
- Instant Replay
- PoE (Power over Ethernet connection)
- Ethernet Port
- Full color 4.3" graphic TFT screen
- Dimensions:
  - W: 150 mm
  - H: 99 mm
  - D: 134 mm
  - W: 1,8 KG



NW-6860-1000  
Fixed Capsule



NW-6880  
Float Free  
Capsule



NW-64xx  
Data Acquisition Unit (DAQ)



## DAQ

### NW-64xx Data Acquisition Unit

The NW-6400 Bus-coupler is a DIN-rail mounted interface unit which provides a gateway between the Core Module and the serial, digital and/or analogue adaptors placed adjacent to the same Bus-coupler. The Bus-coupler is connected through a backplane strip for power and data exchange to the adaptors. The Bus-coupler provides a 24V DC (provided by PoE) for dry contacts to be sensed by the digital adaptor, to overcome additional power sourcing requirements or galvanic isolation. It also provides a primary Serial interface (up to 38K4) for connected NMEA concentrators or multipliers above 4K8.

- Interfacing with all different types of interconnections, such as:
  - NW-64408 Analogue (Standard 8 ch)
  - NW-64324 Digital (Standard 24 ch)
  - NW-64216 NMEA (Standard 16 ch)
  - Any special protocol like Canbus etc.
- Dimensions:
  - W: 410 mm
  - H: 232 mm
  - D: 182 mm
  - W: 4.80 KG
- Scope can be adjusted by adding adaptors as per above standard adaptors
- PoE (Power over Ethernet) connection to the Core Module



## MICROPHONES

### NW-6020 PoE Microphones

The Netwave Microphones are PoE based. This solution enables easy daisy-chainable connections in the Wheelhouse ceiling, running only one cable to the Core Module, making fast and secure installations possible.

The Netwave PoE microphones supersede the Microphone (MSC.333(90) regulations by recording through separate recording channels for each microphone or line-in interface.

- High Audio Quality
- Single Wire, Daisy-chainable
- Indoor (NW-6020) as well as Outdoor (NW-6021)
- PoE (Power over Ethernet conversion)
- Dimensions:
  - W: 84 mm
  - H: 114 mm
  - D: 40 mm
  - W: 0.36 KG

# WORLD-WIDE SERVICE NETWORK

**Netwave has one of the largest service networks: In over 160 ports, we have over 1000 trained engineers in more than 60 countries.**

All trained engineers are capable of installation and commissioning VDR's and S-VDR' and are allowed to perform annual survey's. Because of this large network, the local support is always available and at short notice.

Netwave's service agents are in most cases Certified to perform the APT test according to all major Classification Societies..

For a complete overview please visit [www.netwavesystems.com](http://www.netwavesystems.com)



# NETWAVE NW-6000 PLUS

**In today's market, the Netwave NW-6000 provides the smallest footprint, the most economical installation costs and thanks to additional functionality will provide unrivalled operational value. The system will provide management –tools and –data to improve transparency in the ship's overall operational performance.**

## **Remote Monitoring**

With secured passwords, NW-6000 can be monitored and managed real time from your office. With Remote Monitoring service, the owner/manager will receive fault diagnosis, status reports, operational performance data and download:

- Download of logs, NMEA data
- Periodic reports
- Without interference of the crew

## **Fixed Capsule**

Netwave has developed its own Fixed Capsule, being completely in control over design and production of this vital unit. With our own capsule with integrated storage server with network drive, Netwave Systems has proven to be the expert on VDR and S-VDR.

## **Camera Monitoring**

The NW-6000 has the possibility to record video from camera's; which can be placed in key locations on the vessel. It will provide additional information on the situation on board in any circumstance the vessel is in. This will allow the ship management to have full access of data, in combination with live streaming camera recordings.

## **Live Replay**

Optional, the NW-6000 has the possibility to integrate with various IBS solutions. With this integration, the bridge crew will have access to instant replay of various VDR recordings.



# NETWAVE 6000 SERIES

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