# NewtComm NC-50D-SH

## Subsea Through Water Communications

**Features:**

- Selectable TX power: 50W, 25W, 5W
- Dual Frequency: 8kHz (NATO) & 25kHz
- Range: +10km @ 8kHz, 7.5km @ 25kHz
- Efficient output amplifier
- High gain, very low noise receiver
- Advanced noise filtering
- Serial port for modem functionality
- Compact and rugged
- Wide input voltage range
- Remote interface panel




**Applications:**

- Primary comms for manned submersibles
- Backup comms for ADS, diving bells

The NewtComm NC-50D-SH is an advanced through water communication system. It provides a robust communications channel through the most challenging under water environments. Built with an advanced digital signal processor the NewtComm delivers powerful, clear and energy efficient communications. The NewtComm offers best-in-class transmission range, phone size and energy efficiency. The NC-50D-SH is the subsea version of the NC-50D. The comms unit is designed for direct integration into submersible vehicles. It can communicate with other phones that utilize the same frequency. The NC50 series is standard equipment in the Nuytco DeepWorker submersible and Exosuit ADS.

The standard frequencies for the NewtComm NC-50D-SH are 8.087kHz and 25.00kHz, commonly called 10k and 27k. Modulation is upper single side band with a voice channel bandwidth of 6kHz (other frequencies available upon request). The phone with matched 8kHz and 25kHz transducers produces over 50 Watts rms transmit power. The phone has an open water range of over 10km @ 8kHz. Three selectable TX power levels allow for use in different ranges and operating environments. Voice pre-processing ensures a consistent TX signal that utilizes the full power of the phone.

The phone features extremely low noise receiver circuitry, capable of picking up the faintest signals. The receiver has selectable auto and manual gain control with range of 102dB. Advanced receiver filtering and squelch controls help reject unwanted noise from the voice channel. The subsea unit has a waterproof integrated speaker rated for 10W. The phone has line outs for both received and transmitted voice for recording or system integration. The NC-50D-SH has a serial port that allows it to be used as a powerful modem.

The NC-50D-SH power amplifier and remote interface are built in waterproof enclosures suitable for use humid submarine conditions. The phone is compact and light weight, making it ideal for submersible vehicles.

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# NewtComm NC-50D-SH

Subsea Through Water Communications

## Specifications

**General:**

- Advanced Digital Signal Processor
- Selectable TX Power
- 50W, 25W, 5W RMS
- 8kHz (NATO) & 25kHz USSB Modulation
- Waterproof case
- Rugged connections
- Palm mic / Headset capable
- Line outs for TX and RX audio
- RS422/485 port for modem functionality

**Open Water Range:**

- Low Power (5W): 3.5km @ 25kHz
- Med Power (25W): 5km @ 25kHz
- High Power (50W): 7.5km @ 25kHz

**Transmitter:**

- Selectable TX Power
- 50W, 25W, 5W RMS TX Power
- Power efficient Class D Transmitter
- Voice envelope processing for powerful and consistent TX signal
- Matched transducer for maximum power transfer

**Receiver:**

- Very low noise receiver circuitry
- Automatic / Manual Gain Control with wide dynamic range of 102 dB
- Selectable voice channel bandwidth 6 – 3kHz
- Advanced 16 band Noise Reduction filter
- Squelch control
- Low RX power consumption 0.75W
- 10W speaker output

**Transducer:**

- NewtComm NC-XDR-27K
- NewtComm NC-XDR-10K
- MCBH2MSS Connector
- Rugged SS base
- #10-24 threaded mounting holes
- Air Weight: 0.47 kg, 1.1 lbs
- Water Weight: 0.31 kg, 0.7 lbs

**Input Power:**

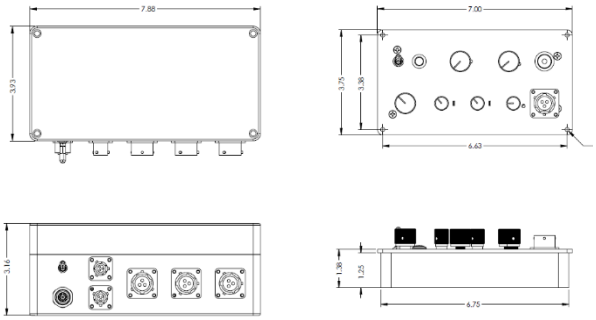
- Wide range: 10-36 VDC
- Current: 9A peak @ 12VDC

**Power Amp Enclosure:**

- Rugged, waterproof diecast aluminum enclosure
- (L x W x H): 203 x 102 x 104 mm
- (L x W x H): 8.0” x 4.0” x 4.13”
- 1.5 kg, 3.3 lbs

**Interface Panel:**

- Rugged, waterproof enclosure
- (L x W x H): 239 x 160 x 100 mm
- (L x W x H): 9.4” x 6.3” x 3.9”
- 1.81 kg, 4.0 lbs
- Integrated Speaker



*All specifications subject to change without notice.*

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