# NewtComm NC-50D

## Portable 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
- Rugged, compact, and portable
- Long battery life



**Applications:**

- Surface station for manned submersibles
- Backup comms for ADS, diving bells
- Portable comms for dive boats

The NewtComm NC-50D 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 is a dual channel surface station that can communicate with other phones that utilize the same frequencies. A subsea version NC-50D-S is also available for direct integration into submersible vehicles. The NC50 series is standard equipment in the Nuytco DeepWorker submersible and Exosuit ADS.

The standard frequencies for the NewtComm NC-50D 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. Up to 100 hours run time when using the built in battery. The surface unit has a powerful 15W speaker for use in very noise environments. The phone has line outs for both received and transmitted voice for recording or PA system integration. The NC-50D has a serial port that allows it to be used as a powerful modem.

The NC-50D is built into a Mil-Spec rugged waterproof case that is buoyant in water. The phone is light weight and portable for easy use in small boats. A rackmount version of the NC50D is also available.

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# NewtComm NC-50D

Portable 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
- 15W speaker output

*All specifications subject to change without notice.*

**Transducers:**

- NewtComm NC-XDR-27K
- NewtComm NC-XDR-10K
- MCBH2MSS Connector
- Rugged SS base with mounting holes or rope tie off point
- 20ft cable standard
- 100ft cable optional

**Run Time:**

- Low TX Power (5W): 100 hr*
- Med TX Power (25W): 35 hr*
- High TX Power (50W): 12 hr*

  * Based on 15% TX duty cycle

**Battery:**

- 18 Ah 12V SLA Battery
- Built in charging circuitry
- Wide input charging voltage 9 – 16VDC, 6.5A Max

**Case:**

- Rugged and waterproof Mil-Spec injection-molded case
- Removable lid
- Buoyant in water
- (L x W x H): 391 x 307x 173 mm
- (L x W x H): 15.4” x 12.1” x 6.8”
- 10 Kg, 22 lbs



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