SONOTRONICS

UDR

Underwater
Diver
Receiver

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The SONOTRONICS UDR "Underwater Diver Receiver" is a handheld sonic receiver designed to allow a diver to locate pingers in a marine environment. The unit contains a directional transducer allowing the diver to determine the direction of the pinger based upon the audio signal strength apparent in the waterproof headphones included with the unit. Applications include: Location of marked equipment, other divers, and many other target locating applications.

The UDR contains in internal rechargeable battery pack and may be charged using an included power adapter through a jack on the unit.

SPECIFICATIONS:

FREQUENCY:	Programmable: 30 to 85 kHz
BANDWIDTH:	+/- 250 hZ
DISPLAY:	LCD: displays frequency and pulse interval.
SENSITIVITY:	20uVolts for 30 dB (S+N)/N
SIZE:	16cm x11cm x 20cm
WEIGHT:	UDR:900g Headphones:415g
POWER:	Internal rechargeable battery with charger.
BATTERY LIFE:	8 Hours**,** recharge time 12 hours.
DEPTH RATING:	100m

UDR OPERATION:

Attaching Headphones: Simply plug the headphones into the side of the unit and tighten down the threaded seal hand tight to secure the O-ring.

Powering the Unit On: Pull down on the lock and turn the power knob to the left. Note that when the unit first comes on there is a remaining battery indicator, denoted by "**b XX**" where XX is a number from to 00 to 100.

Selecting Frequency, Gain, and Volume: Press the left button to cycle through which setting you wish to change, and press the right button to change the setting. Here are the settings that you can change in order:

F XX.X is the frequency setting, where XX.X is the frequency in kHz, perhaps 75.0

G2 X change coarse gain setting. You will see a number 0 through 9 for X.

G1 X change fine gain setting. You will see a number 0 through 9 for X.

V X increase volume setting. You will see a number 1 through 10 for X.

V- X decrease volume setting. You will see a number 1 through 10 for X.

Interval Display: The interval display function can be turned off or on in programming mode. This will display the time between pings in ms on the display. This can be used as a tool to receive telemetry from depth or temperature transmitters, or as an additional quick way to identify pingers when there are multiple pingers on one frequency.

Backlight: The backlight comes on automatically when the user is pressing buttons, or when tags are detected. This feature can be turned off in the programming mode.

Tracking: To track using the UDR, the recommended procedure is to turn on the unit, adjust the volume to a level which is comfortable for the user, adjust the gain to a level appropriate for the tracking situation (see next section), select the frequency of the desired pinger, and begin the dive. A large amount of acoustic noise is generated when the divers bubbles leave the second stage regulator so it is recommended procedure to breathe and then spend a few seconds listening and pointing the UDR to find the direction of the target. It is recommended that programming the unit is done at the surface prior to diving, as there are two many features to cycle through to be feasible while on the dive. The changes to the unit accessed during programming should not be necessary to change during a dive.

Using the signal strength indicator: The signal strength indicator is a group of bars that move from left to right on the screen of the UDR in order to provide data about the strength of the incoming signal. This can be used to aid the diver in locating and approaching a pinger. By default, the signal strength indicator is on in the UDR.

Using the gain control: The gain control in the UDR allows for the receiver to be tailored for different applications, i.e. close range location or long range detection. The UDR's gain control can be changed while diving. The gain essentially is a number 00 through 99. These numbers are implemented by selecting "G2", which is the left digit, then "G1" which is the right digit. An example would be that if a gain setting of 25 is desired, change G2 to a 2, and G1 to a five. After passing through the G1 and G2 settings in the menu, the receiver will display what the current gain setting is, following the above example it would display "G 25" for about a second.

Examples:
A low visibility example: In a extremely low visibility environment an example might be that the gain setting is set to 40 during the approach to the pinger. As the diver gets closer and begins to hear the signal in all directions, he may end up lowering the gain to 10. At this point he will regain directionality and be able to sweep the unit around until finding the greatest signal strength.

A long range example: A diver 200m away from the target may turn the gain up to 99, maximizing detection range. As he gets closer, he may turn down the gain a few times until getting a visual on the target.

PROGRAMMING:

The UDR contains a programming mode which can be entered just after powering the unit on. Just after the unit is turned on an annunciator appears in the upper left corner of the units display. To enter the mode, tap the right button while this annunciator is shown. The left button changes the settings, the right button changes the value of the particular setting.

The unit can then be programmed with the following features:

1. Number of Channels: 1 - 16.

This is the number of different frequencies you want access to "on the fly". They are actually labeled 0-9 and the A-F on the display, where a = 10, b = 11, etc.

2. Frequency of each channel:

This then allows the user to pick the exact frequency that will be used for each channel chosen above.The channel number you are on and corresponding frequency will be displayed: **"3.38.5" would be channel 3 = 38.5kHz.**

3. Interval off/on:

When turned on this function will display the interval time in milliseconds between the incoming pings. This is useful for identifying specific pingers when multiple pingers are present, or for receiving depth or temperature telemetry from pingers.

4. Light off/auto:

This feature causes the backlight to come on when buttons are pressed. Turning this feature off can increase battery life when visibility is not a problem.

5. Display:

Interval (In) - Pulse intervals (time between pings) will be displayed
Signal Strength Indicator (CS) - turns signal strength indicator on
Off—neither pulse intervals or signal strength indicator are displayed

6. **Factory settings yes/no:** The last setting in programming mode is the "FAC" This means "Factory settings". If you leave this setting as "FAC n" it will accept the changes that you have just entered. If you wish to return the default factory settings, simply advance the setting until it only reads "FAC ".

Important tip: *When in the vicinity of the pinger, you will hear the "hum" of the oscillator inside the pinger. You can get even better accuracy by listening to this hum instead of the pings.*

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