VR4-UWM Quick Guide
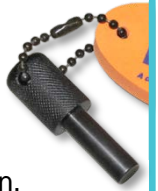
This VR4-UWM Quick Guide *only contains the key VR4-UWM procedures*. Full details for all VR4-UWM procedures are found in the VR4-UWM User manual and at www.vemco.com. We strongly recommend you read the full user manual before using this quick guide.

Bluetooth Communication

Place the VR4-UWM within 2 meters of the PC with the Bluetooth USB adapter attached.

Place the Comm Key (magnet) against the circular indent in the VR4-UWM's lid. The Status Light should flash red once a second.

Open VUE software. If the VR4-UWM doesn't appear in "Bluetooth Devices" section, then click "Device Scan" and wait.

Double-click on the icon of the receiver and wait for receiver information to be displayed.

Acoustic Communication

1. Reduce other noise sources in water (depth sounder, propeller noise, etc.).
2. Connect the surface modem to the Deck box and the Deck box to the PC.
3. Turn on the Deck box.
4. Launch the VUE software and click on the Serial Device COM number that connects to the Deck box.
5. Select "VR4-UWM"
6. Enter the VR4-UWM serial number, or click "Scan".
7. Enter the VR4-UWM modem address, or click "Scan".
8. Wait for receiver and modem information to be displayed.

Mooring Design

- Mooring design should not interfere with receiver's line of sight
- Keep receiver as vertically upright as possible
- Communicate with modem during deployment
- Do not allow mooring cables or chains to rub against the receiver

VUE Tasks

Start Recording: Initializes the receiver to the desired settings, erasing memory; also removes VR4-UWM from Suspend mode (Bluetooth only).

Offload data: Copy data from the VR4-UWM memory to the PC. Select "Offload New" to copy only data that has never been offloaded.

Set advanced device options: Contains more advanced options, such as updating firmware.

Click the blue circular icon in the top right corner to refresh the receiver information shown on the screen.

Lock/Unlock VR4-UWM: Only applies if a password has been enabled

Close VUE: Disconnects communication between VUE and receiver.

Low Power Sleep: Put the VR4-UWM in Suspend mode – only available with Bluetooth communication.

Advanced Acoustic Communication Points

- Errors encountered in transmitting data from VR4-UWM to the surface require data to be re-transmitted. If this occurs try:
  - Moving the slider closer to "Reliable"
  - Click "Advanced" box and make adjustments (see next point).

- If you are unfamiliar with the settings necessary at a particular location, begin with the settings shown in the sample shown at right and make further adjustments as needed. These settings are a good starting point.

- May need to increase both the up and down power settings as the boat drifts away from the VR4-UWM. **Do not increase the power too quickly or too strongly**, as echoes may be created that will increase communication errors/time required.

- Reduce power levels for both up and down communication if the boat is close to the receiver and communication quality is poor. **Too much power may cause additional noise in the water** and lower the quality of communication.

- If you are working in an **acoustically reflective environment** (hard bottom), avoid using high power settings as this can cause intense reflected signals that could interfere with the direct communication signals.

- Use a VR100 receiver set to 20 kHz and an omni-directional hydrophone (place hydrophone in water, below draft of boat) to listen to the signals being transmitted between VR4-UWM and the Benthos transducer.

- If you are outside acoustic range from the VR4-UWM, the commands sent from the VUE software will not be received by the receiver. Move closer and try to send the command again.

- When you change a communication setting, it takes time (two consecutive transmissions) for the VR4-UWM to receive the command and make the change. **Be patient!**

- If the surface transponder is close to the VR4-UWM and communication quality is poor, then reduce the baud rate to 300-600 baud. This should reduce the communication errors caused by fewer transmission repetitions.

- Status and Range communications are short messages that are more likely to "get through" during challenging acoustic conditions than the larger offload communication. **Use these smaller communications to help identify the settings** needed to establish "good" or "very good" communication levels.

- If a VR4-UWM is stationed in an area where you expect there will be lots of tagged animals, offload the data on a more frequent schedule to reduce the amount of time required to offload data at each visit to the site.

- **Record** the environmental conditions, power and bit rate settings for each VR4-UWM location. This will reduce the communication setup time for your next visit to this location.   For example, if the area has a hard flat bottom that is very reflective to acoustic signals and requires a lower power setting, then start with the same power setting at your next visit.

- **Power scale:** 0 dB is the highest power (signal strength) and -21 dB is the lowest power level. Using a high power level when it is not necessary can increase communication errors by saturating the area with acoustic energy.

Operating temperature: -5 °C to 40 °C; Water in which the VR4-UWM is deployed _must not freeze_.

Static depth rating: 500 meters (730 psi)

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Automatic Tuning

Reliable — Fast

Update Range ☑Advanced

5 minutes ▼ Ranging Period

300 bps ▼ Bit Rate Down

1066 bps ▼ Bit Rate Up

-18 dB ▼ Power Down

-12 dB ▼ Power Up