



This guide provides information for field communication with the Ascent Acoustic Release (Ascent-AR/AR2 or A-AR).

Equipment

Acoustic transponding communication requires three elements: an **Ascent Acoustic Release**, a **VR100-200** receiver, and a **transponding hydrophone** like the one shown below.

Connect the transponding hydrophone to the first connector on the side of the VR100-200 case (see photo, far right).

Place the transponding hydrophone in the water so it is at least **5m** below the hull of the boat. The hydrophone needs line-of-sight to the receiver.



Make sure the hydrophone doesn't bang against the hull. Turn off your boat's depth sounder, and if possible, the engine. These can interfere with communication.

Status Light

Before deploying an Ascent-AR, watch the Status Light for **two quick red flashes** every 5 seconds indicating that the Ascent-AR is **powered and active**.

If there are no flashes, the Ascent-AR receiver is not powered.

Green flashes indicate acoustic pings were transmitted, but only if the transmit feature is enabled.



Connect

1. Turn on the VR100-200.
2. On the main menu, select **Transpond**.
3. To scan for Ascent-ARs in the area, select **Auto Scan** or **Manual Scan**. Alternately, select **Add Device** and enter the receiver serial number.
4. Wait while the "wake-up" command is broadcast, and again for responses from units in the area. These wait times are fixed and displayed with a "T_" counter. The VR100-200 will not respond to user input until the wait times are completed.
5. Select the desired unit from those that responded. If your desired unit is not listed, select **Rescan** to try again.

```
SCANNING... Found 3
A-AR: 012344 100m
T-13 63dB III
M00 Mute
```

Health

You are encouraged to use **Get Health** to establish communications, as it takes less time (at 69kHz).

1. Select **Status...**
2. Select **Get Health...**
3. Wait while range/depth information is gathered from the receiver and then displayed. From top:

| | | |
|--------------|--------|-------------------------------|
| A-AR: 012345 | 170m | • serial number & slant range |
| Batt: <25% * | left | • battery life |
| Mem: 0-30% | used | • memory used |
| Tilt: 0-11° | Resend | • angle from vertical |

Range

1. Select **Status...**
2. Select **Get Range...**
3. Wait while range/depth information is gathered from the Ascent-AR and then displayed.

```
A-AR: 012345 170m
hRange: 80m
Depth: 150m
Resend
```

From top:

- serial number & slant range
- horizontal range
- depth

To refresh the information onscreen, select **Resend**.

*The remaining battery capacity displayed on the VR100 (Batt: xx%) is a soft counter intended to estimate the unit's remaining battery life. For the counter to display the correct battery capacity, you must connect to VUE and initialize the receiver each time the receiver battery is replaced (see receiver manual for details).

Acoustic Release

1. From the main transponding menu, select **Acoustic Release**.
2. **Verify Status:**
 - a. To view the receiver's release status, select **Status**. It should report **Unarmed** at this stage. Press **MENU** to go back to the menu.
3. **Arm release:**
 - a. Select **Arm** and wait for the status to change to **Armed**.
NOTE: An ASCENT-AR with firmware 1.2.5 and up does not require this arming step.
4. **Activate release:**
 - a. Select **Activate** to send the release command. After reading the confirmation screen, select **Activate** again.
 - b. Wait while the mooring lug is ejected from the receiver. The status is reported as **Opening** until the ASCENT-AR's motor has completed the task, at which time the status changes to **Open**.
5. Press **MENU** to go back a screen and then select **Status**. The current status is reported and refreshing the information (select **Resend**) allows you to view the progress to surface.
6. To refresh the depth value, select **Resend** and "watch" the receiver ascend. This also reports the horizontal distance to the receiver for easier retrieval.

| | |
|------------|--------|
| 1 Status | |
| 2 Arm | |
| 3 Activate | Select |



| | |
|----------------|--------|
| A-AR:000001 | 150m |
| Status: Opened | |
| hRange: 80m | |
| Depth: 130m | Resend |

Trouble?

If receivers do not respond to commands, try the following suggestions:

- Move the research vessel closer to the ASCENT.
- Check the power level setting of the VR100-200. On the main screen, select **Transpond** and then **Hydrophone Power** (#4). If the power is *low*, increase the power level and scan for receivers again. If the power level is *high* and you are working in shallow water, decrease the power level and scan again (high power may cause echoes under certain conditions such as shallow water, reflective environments, or when too close to the receiver).
- Manually increase the Gain on the VR100.
- Check the receiver's transmit power level (**Settings > Power Level**) and increase it if possible. If power is high, lower power to decrease echo effects.
- A successful release will report **Opening** and then change to **Open**; all other values will warrant a Retry (i.e. "Jammed", "Unarmed", "ERROR"). If you still don't have success, contact VEMCO.
- If **Unarmed** is reported when trying to release, select **Acoustic Release** (#3) and then **Arm** (#2) to arm the receiver and prepare it for release. Select **Activate** to perform the release.

| | | | | | | | |
|----------------------|---|---|---|---|---|---|-----|
| Transmit power level | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | ↓ |
| | | | * | | | | |
| | | | | | | | Set |