

Experiment 1: Underwater Acoustic Modem Performance Test in Ocean Noise Background

Model: UAM-08160H

Version: —

Document Type: Performance Test

Experiment Location

Sea area of Weihai City, Shandong Province, China

Main Purpose & Application Scope

Configure the C01-6 and C01-5 acoustic communication devices into a point-to-point working mode, and test the communication distance under the influence of general ocean background noise. The test water depth shall be no less than 20 meters. During the test, the acoustic communication devices on the two vessels shall send messages using the device IDs to each other. Successful reception of a message shall be considered a successful communication. The validity of the communication distance shall be determined based on the success rate of multiple transmission attempts. Record the GPS coordinates of each test point and the effective packet success rate at that distance

Experimental Data Record

From 10:30 to 12:50 on August 29, 2025, the communication performance was tested in the ranges of 1 km to 1.3 km and 2.5 km to 3.3 km

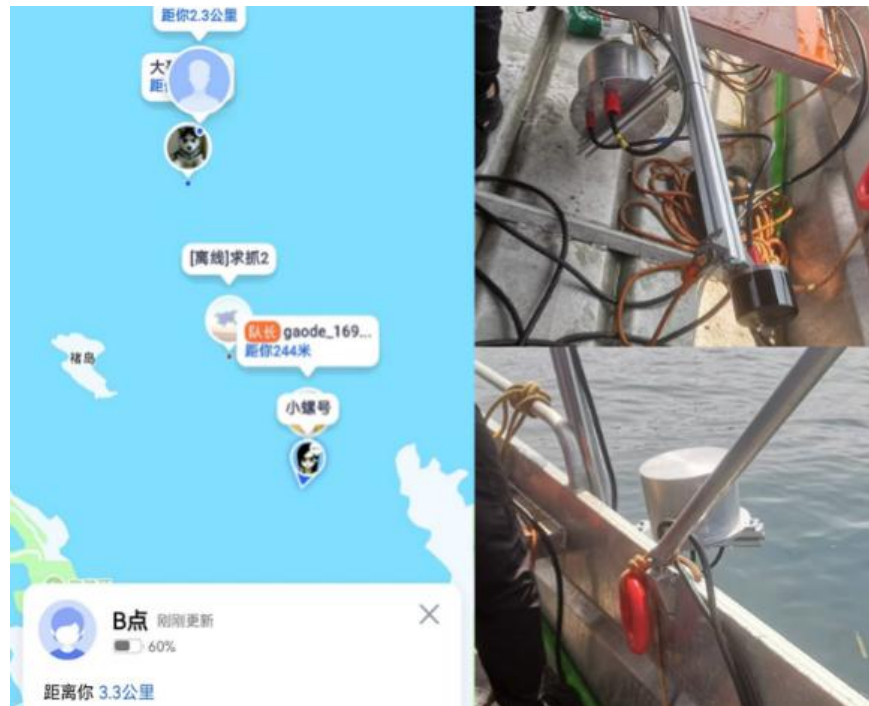


Figure 1 Test Site Image

Table 1 Test Record Sheet

	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6
Depth at Point A	5m	5m	5m	5m	10m	10m
Depth at Point B	5m	5m	5m	5m	8m	8m
Coordinates of Point A	E122.093022 N37.569769	E122.119543 N37.570762	E122.105262 N37.564821 E122.116540 N37.577712	E122°03.592' N37°35.070'	E122°03.592' N37°35.070'	E122°04.878' N37°35.196'
Coordinates of Point B	E112°05.242' N37°34.84'	E122°05.578' N37°35.511'	E122°05.540' N37°35.500'	E122°04.696' N37°35.314'	E122°05.608' N37°35.479'	E122°06.352' N37°35.206'
Distance	1.3km	3.3km	3.2km 2.6km	1.684km	3.055km	2.167km
Reception status at Point A	10/10	8/10	3/4 9/10	18/20	40/40	3k rate 10/10 6k rate 16/16
Reception status at Point B	10/10	30/30	5/5	10/10	38/40	19/20
Packet loss rate at Point A	0	20%	25% 10%	10%	0	3k rate 0% 6k rate 0%
Packet loss rate at Point B	0	0	0	0	5%	5%

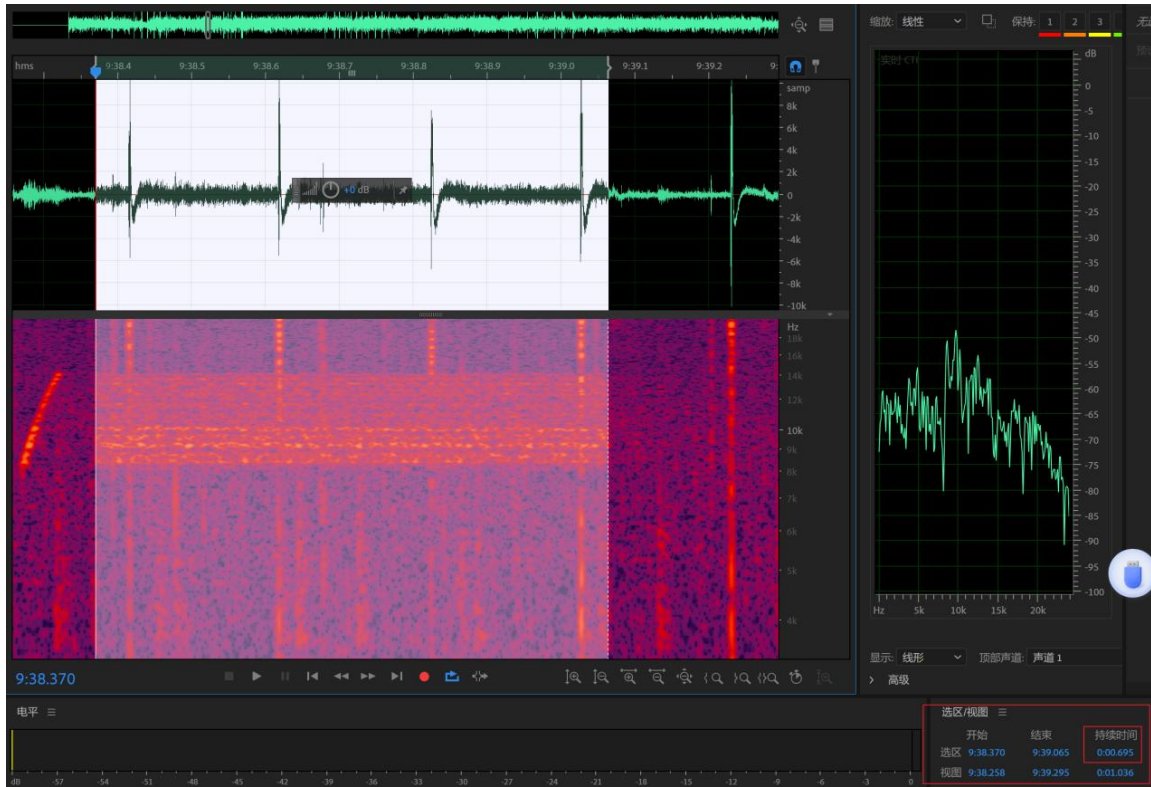


Figure 2 Experimental recorded data waveform