Sonde Deployment and Recovery Procedures

# Introduction

The Stellwagen Bank National Marine Sanctuary and MIT Sea Grant are collaborating on a project to look at ocean acidification (OA) in the sanctuary. Changes in ocean chemistry are an area of key interest for the sanctuary, but little research has been conducted. The sanctuary’s 15m R/V Auk makes approximately 70 trips per year and the proposed Eureka sensor can be opportunistically deployed on many of these trips in various parts of the sanctuary. In addition, our research also involves standardized sampling at 44 sites throughout the sanctuary each spring, summer and fall. In this project, the Eureka device would be attached to a USGS Seabed Observation and Sampling System (SEAABOSS) unit and data would be systematically collected over an ongoing time period. Alternatively the Eureka sonde will be manually deployed to collect vertical profile data by hand. Combining these opportunistic and standardized dataset will give MIT Sea Grant and the sanctuary an unprecedented ability to investigate OA.

The objective of this paper is provide a guide for calibration and deployment of the Eureka Manta 2 data sonde aboard the R/V Auk.

# Calibration Procedures

Please refer to the [Manta 2 Manual](https://docs.wixstatic.com/ugd/7f6545_f1fc5b1a1d3844c19103377c8714a54a.pdf) calibration section for any questions

# Deployment Procedures

Please refer to the [Manta 2 Manual](https://docs.wixstatic.com/ugd/7f6545_f1fc5b1a1d3844c19103377c8714a54a.pdf) for any operating questions.

Note: Manta data sampling rate set at 1 minute the fastest possible data rate

### Deployment Preparation:

1. Loop line through the metal eye ring on the top of the sonde. Tie line in such a way that the sonde cannot come detached when deployed.
2. Tie a second line to the sonde with an attached drop weight (5lbs) extending a few feet from the sonde.
3. Tie off the opposite end of the line to a secure point on the vessel.
4. Be sure to asses where the currents will take the line when deployed to eliminate any entanglement with the vessels propeller.

### Vertical Profile:

1. Remove storage/calibration cup and install weighted sensor guard.
2. Turn on unit and look for red flashing light indicating data logging is on. The red led will flash 5 times upon startup to indicate that the Manta 2 is set to internally log data.
3. Lower sonde into the water and allow to equilibrate at the surface for 30 seconds before lowering to the bottom.
4. Lower sonde hand over hand until you touch the bottom with the weight. Lift a few feet off the bottom and wait 1 minute to make sure you get a reading at the maximum depth.
5. Raise sonde hand over hand and recover.

# End of Day Procedures

* Download data and add GPS locations to a test file. Please name each file with the date of deployment in year-month-date format (20190220).
* Rinse sonde and sensors with fresh water
* Add a small amount of fresh water to storage/calibration cup and seal