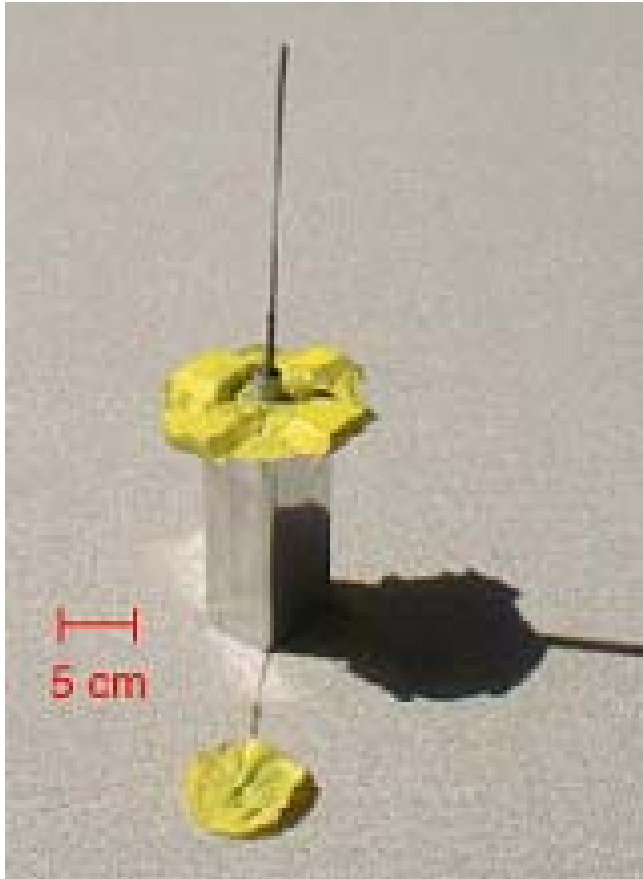


MAXWB

Micro-sized Air-launched Expendable Wave Buoy

MAXWB measures near real-time non-directional wave data, including significant wave height, dominant wave period, average wave period, non-directional wave spectra and sea surface temperature. The MAXWB was designed for supporting military applications such as providing wave and surf data in support of amphibious and near-shore operations that involve critical systems such as the Marine Corps' Advanced Amphibious Assault Vehicle (AAAV) and Navy LCAC air cushion landing vehicles. The MAXWB conforms to the standard MJU-10B flare countermeasures dimensions and can be deployed from manned or unmanned aircraft from altitudes up to 25,000 feet using a standard military countermeasures dispenser.





MAXWB was originally designed for military applications and conforms to the standard MJU-10B flare countermeasures dimensions. Upon ejection, the upper part of the packaging falls away, allowing the flotation/stabilizers and data communications antenna to deploy.

MAXWB electronics consists of a single vertically oriented micro-machined accelerometer, a temperature sensor, a microcomputer for data acquisition and processing, and a UHF (400 – 406 MHz) transmitter powered by lithium batteries. A laptop PC and UHF receiver located in the launch aircraft records the transmitted data. The transmitter can be configured with a transmit protocol compatible with the AVAPS Dropsonde System receivers manufactured by Vaisala, Inc., Boulder, CO.

MAXWB is designed for short-term deployments in the near-shore or deep-water environments. It can be used to collect wave data in storms and hurricanes where conventional gauges may be difficult to deploy.

Sensors

Single Axis Accelerometer
 Sampling Rate: 8.3 Hz
 Default Record Length: 4096 Samples (8.2 min)
 Sea Surface Temperature

Accuracies and Ranges

Wave Height: ± 0.25 m, 0.25 to 0.99 m
 $\pm 10\%$, 1 to 10 m
 Dominant/Average Period: ± 0.5 s, 1 to 25 s
 Sea Surface Temperature: $\pm 0.5^\circ$ C, -5 to $+40^\circ$ C
 Accuracies are limited by statistical confidence associated with natural wave variability ($\approx \pm 10\%$ for height, $\approx \pm 5 - 10\%$ for period, $\approx \pm 20\%$ for spectra)

Physical

Weight: 433 g (15.3 oz)
 Dimensions: 5.0 x 6.4 x 20.0 cm
 (2.0 x 2.5 x 8.0 in)
 Shock Tolerance: 800 g's

Operational

Operating Temperature Range: -40° C to $+40^\circ$
 Battery Life: > 12 hrs

Transmitter

Band: 400 - 406 MHz (UHF)
 Output Power: 50 to 500 mW
 AVAPS/COTS Compatible