

CEE HydroSystems Supply Jet Ski Survey Package

CEE HydroSystems recently supplied a unique single beam hydrographic survey package for shallow water surveys to be performed using a Jet Ski by a French survey firm on behalf of an oil major. Instead of a complete "turnkey" survey personal watercraft, CEE supplied a portable "add on" survey pack that the client could easily mount onto an existing craft. Using the unique compact CEESCOPE™ RTK as the foundation for the system offered a small form factor solution with a waterproof design ready for the rigors of surveying in the surf zone and beyond. The approach used for this project called for the telemetry-enabled variant of the CEESCOPE with a high power WiFi Access Point to eliminate the requirement for cables to the acquisition computer - in this case a waterproof tablet. To collect the data, the CEESCOPE offers two redundant methods. The HYPACK RAW and BIN data files may be recorded and stored inside the echo sounder, and at the same time the waterproof tablet on the Jet Ski running HYPACK may be connected to the WiFi access point and receive data in real time.

Using a conventional echo sounder and GNSS in this manner - with a wireless data connection - would lead to unacceptable latency and timing errors that would almost certainly invalidate the data on such a small vehicle, especially in the dynamic environment of the surf zone. However, the CEESCOPE applies a millisecond time stamp to all data at the point of collection; this time stamp is retained throughout the data telemetry and acquisition process and so the data record in HYPACK exactly matches the data as it was collected - independent of any delays or variability of transmission through the WiFi data telemetry. The presence of the time stamped data, and the specialized HYPACK drivers to record the data, is the key to the design of the Jet Ski data system supplied for this project.

Outside the waterproof case, only the transducer, GNSS antenna, and UHF radio antenna must be installed on the vehicle. With the RTK GNSS receiver safely integrated inside the CEESCOPE enclosure, the cost of the components exposed to the elements - ie the GNSS antenna - is minimized. Inside, dual 10Ah batteries easily provide enough power for a full day's surveying and the touch screen interface accessible with the CEESCOPE lid removed allows a fast and easy setup at the start of the day. All components are secured on an anodized aluminum frame with stainless steel hardware.

As the Jet Ski system has a high-power access point, the system may even be reconfigured with an external 5GHz antenna, allowing curious surveyors on the shore or on another boat to simultaneously view and / or record the survey data from the CEESCOPE.

CEESCOPE - Jet Ski kit with 200 kHz transducer, GNSS antenna and UHF antenna:



CEESCOPE Jet Ski kit internal view with 2x 10Ah batteries for extended runtime:





The CEESCOPE uses its built-in fast 20Hz RTK GNSS receiver, connected to a base station by its 403-470MHz radio to eliminate vehicle heave, with the bottom elevation mapped by precise dual frequency 33/200 kHz soundings at up to 20Hz ping rate.

For details on this or other custom personal watercraft survey solutions contact CEE HydroSystems.