

FOR IMMEDIATE RELEASE

Red Bull Air Race Selects the VectorNav VN-300 for Onboard Telemetry

Dallas, TX – February 26, 2018 – VectorNav Technologies, a leading supplier of embedded inertial navigation systems is pleased to announce that Red Bull Air Race have selected the VectorNav VN-300 Dual Antenna GNSS-Aided Inertial Navigation System as the primary source of aircraft telemetry data for the Master Class raceplanes participating in the Red Bull Air Race World Championship. The inaugural event of the 2018 season in Abu Dhabi saw the VN-300 used for the first time in all 14 aircraft to provide real-time telemetry data used for judging, in-race simulation and virtual reality applications.



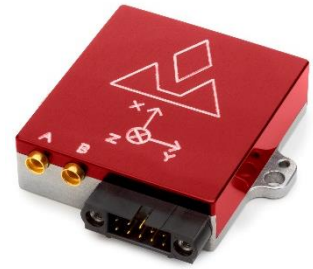
Michael Goulian of the United States performs during the finals at the first round of the Red Bull Air Race World Championship in Abu Dhabi, United Arab Emirates on February 3, 2018. // Andreas Langreiter / Red Bull Content Pool

Created in 2003, the Red Bull Air Race World Championship has held more than 80 races around the globe. The Red Bull Air Race World Championship features the world's best race pilots in a pure motorsport competition that combines speed, precision and skill. Using the fastest, most agile, lightweight racing planes, pilots hit speeds of 370 km/h while enduring forces of up to 10 G as they navigate a low-level slalom track marked by 25-meter-high, air-filled pylons. Pilots incur time penalties for hitting pylons, incorrectly passing through the Air Gates or only exceeding 10 G for more than 0.6 seconds, amongst some others.

Being an individual sport, spectators need a reference to see the difference between the pilots' lines and speed through the racetrack. Red Bull Air Race Live TV utilizes an augmented reality (AR) solution known as the Ghost Plane to display the trajectory of the pilots' runs for real-time comparison in the head-to-head rounds and the Final 4 that decides the winner of the race by time. The Ghost Plane is driven by the position, velocity and attitude data gathered during flight from the onboard Inertial Navigation System (INS).

Critical to the success of the Ghost Plane is the accuracy of the telemetry data, which given the high dynamics experienced during flight is extremely difficult to obtain. For example, as a plane races through a chicane and into a vertical turn maneuver GPS signals are lost and the INS needs to rely solely on the inertial sensors to accurately estimate the position and velocity until GPS is fixed again in level flight. Alvaro Navas, Sport Technical Manager for the Red Bull Air Race, says "We evaluated several different inertial navigation systems and struggled to find one that was able to perform in our dynamics. VectorNav's VN-300 was the only product able to deliver the attitude, position and velocity data accuracy we require, and it did this out of the box, no customization was required. The sensor is really amazing!"

Weighing less than 30 grams, the VectorNav VN-300 is the world's smallest dual antenna GNSS-aided INS and used in many applications ranging from autonomous vehicles to antenna pointing for satellite communication and aerial surveillance applications. Gordon Hain, VectorNav Product Manager: "We are really excited to be working with Red Bull Air Race. Not only are we able to provide accurate data for the race judges and spectators but we are also able to provide valuable information to pilots and tacticians. With the VectorNav data in hand they are able to compare actual flight trajectories with their simulations to find areas for improvement. We are looking forward to continued work with Red Bull Air Race in the 2018 season and beyond."



VectorNav's VN-300 Dual Antenna
GNSS/INS

About VectorNav Technologies:

VectorNav Technologies is the leading innovator and manufacturer of embedded navigation solutions using the latest in MEMS inertial sensor and GPS/GNSS technology. Since its founding in 2008, VectorNav has provided systems integrators in the military, aerospace, marine, and robotics industries around the world with SWaP-C optimized, high-performance navigation systems. VectorNav has unique expertise in applying the digital filtering and sensor calibration techniques that have multiple decades of heritage in aerospace applications to the state-of-the-art in MEMS inertial and GPS/GNSS technology.

About Red Bull Air Race:

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