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FOR IMMEDIATE RELEASE

SDI600 IMU – Competitive IMU Trade Study

Concord, CA – October 1, 2018 - Systron Donner Inertial (SDI), announces the completion of a comprehensive IMU Trade Study involving leading IMUs from Honeywell (HG1700-AG58, HG1930-CA50), Northrop Grumman (LN200 311875-1N432), KVH Industries (KVH1750) and Sensoror (STIM300) against SDI's latest generation SDI600 "All-Causes" Tactical Grade MEMS IMU.

It is recognized in the industry that IMU performance measurements under nominal laboratory conditions poorly predict real-world performance. This trade study of six well known IMUs demonstrates that performance changes under real-world environmental stimuli (i.e., weapon environmental conditions) can be severe and that "all causes" integrated-error measurements are an effective discriminator among tactical/near-tactical IMUs.

Systron Donner Inertial's trade study tested all six IMUs under the same conditions, test profiles and test setup for the following:

- Vibration and temperature on Controlled Oven Shaker Table
- Rate and Temperature cycles in Dual Axis Rate Table
- Turn On repeatability and stability
- Noise variance test

Performance data was acquired for both accelerometers and gyroscopes. IMU level integrated bias error is extracted for accels and gyros. This error was summarized for each set of sensors as RSS of velocity drift (accel) and attitude drift (gyro)

Conclusions of the controlled trade study reveal the Systron Donner Inertial SDI600 offers the best overall performance. The SDI600 consistently achieved best or comparable performance across environmental conditions, including extended temperature range (-55C to 85C) and captive carry weapons conditions. The other five IMU solutions did show strengths in specific areas but fall short compared to the SDI600 in terms of integrated error over time.





Systron Donner Inertial’s current IMU product – the SDI500, is the benchmark for performance in MEMS devices. The driver of this performance is our unique Quartz MEMS technology. SDI now introduces an upgraded SDI600 IMU, which maintains performance attributes of the SDI500 while increasing bandwidth and environmental robustness. The new IMU raises the bar for MEMS inertial systems equal to or better than industry leading optical systems and stands head and shoulders above silicon MEMS IMUs.

SDI currently produces IMUs with gyro bias < 1 °/hr over the full military temperature range, other key features for the SDI600 include:

- Optimized Ruggedized Design for Captive Carriage Weapons Platforms
- +/- 1,000°/sec dynamic range and +/- 70g linear acceleration
- 1 second full performance start-up
- 0.04°/√hr/ Angle Random Walk
- < 20 in.³ Compact Size
 - 25% smaller than HG1700
 - No external environmental ring isolator required to filter unwanted sensor inputs
- Customer Programmable Output Data Rates & Formats (600/100 Hz standard)
- 95% Built-in Test (BIT) Coverage for ground and captive carriage operations
- Internal/External T.O.V. data sync
- Optional 20,000 hours MTBF Airborne Uninhabited Fighter (AUF) for Captive Carriage at 42°C.
- 20 Year Lifetime without Calibration

To learn about the results of the competitive IMU trade study and/or further information and specifications on the SDI600 tactical grade IMU, including technical information, unit pricing, lead time availability or T&E Consignment units, please consult with your SDI Sales and Marketing Manager or Field Application Engineer.

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About Systron Donner Inertial:

Systron Donner Inertial (SDI) is the world's leading supplier of Quartz MEMS Inertial Sensing Products and Systems providing precision systems solutions to aerospace, military and commercial aircraft, marine and land vehicular applications. Our products and systems are ideally suited for use by Integrators and OEMs. As a pioneer in the development of Quartz MEMS technology utilizing a tuning-fork design, originally introduced at the heart of the company's renown solid-state quartz MEMS sensor design, SDI is continuously developing leading-edge disciplines with new innovative breakthrough products which are enabling advanced performance in critical military and commercial Guidance, Navigation and Control (GN&C) applications worldwide.

Our experience is built on over half a century of market and technological leadership in supplying our innovative gyroscopes, linear accelerometers, inertial measurement unit and INS/GPS designs to these markets, contributing to both overall performance and establishing standards for excellent price/performance characteristics.