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FOR IMMEDIATE RELEASE

Ridgetop Group Receives Contract Award from NASA's Jet Propulsion Laboratory (JPL)

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Tucson-based high technology firm Ridgetop Group, Inc. announced that it has received a new Small Business Innovation Research (SBIR) award to develop a critical high-speed, radiation-hardened component for use in a future NASA spacecraft mission to Jupiter. The component, referred to as an analog-to-digital converter (ADC), converts sensor data to digital form so that it can be processed with algorithms to extract important information. It will be used in an advanced radar mapping application.

Ridgetop has gained an impressive reputation as a key supplier to various Department of Defense and NASA organizations for products that will survive harsh environments encountered in space, such as extreme temperatures and radiation exposure. In the Jupiter Europa spacecraft mission, a key requirement is to provide high performance while resisting the damaging effects of space radiation. NASA's spacecraft will orbit the Europa Moon, where precision instruments will map the surface.

According to Ridgetop's Principal Investigator, Dr. Esko Mikkola, "We are proud to have been selected by NASA's Jet Propulsion Laboratory to develop this component. Our technical staff combines years of practical design of precision analog-to-digital converter technologies, with well-grounded knowledge necessary to mitigate the effects of radiation."

Founded in 2000, Ridgetop has received a number of awards from NASA, Air Force, Navy and government Prime Contractors associated with the design of components and systems for critical applications. Ridgetop received official accreditation from the Defense Microelectronics Activity (DMEA) in 2010 as a Trusted Supplier of domestically designed and produced components for critical applications. Ridgetop will have an exhibit at the Hardened Electronics and Radiation Technology (HEART) conference in Orlando, Florida next week.

About Ridgetop Group

Based in Tucson, Arizona, Ridgetop Group is the world leader in providing advanced electronic prognostics and health management (PHM) solutions, semiconductors for harsh environments, and built-in self-test (BIST) solutions for critical applications. The company maintains business divisions for advanced radiation-hardened microelectronics and electronic prognostics & health management (PHM) solutions for critical electronic sensing and control applications. Founded in 2000, Ridgetop has built an impressive list of aerospace, automotive, and medical systems customers in North America, Europe, and Asia. For more information, please visit www.RidgetopGroup.com.

Technology Backgrounder

Data Converters

Analog-to-digital converters (ADCs) are used to convert analog electrical signals, such as those from sensors, to digital form, where the data can be processed by computers (Figure 1). Typical performance attributes include resolution, conversion speed and linearity.

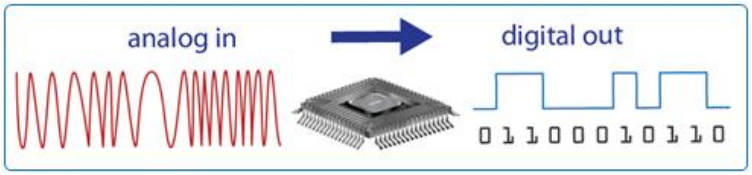

Figure 1: Analog-to-digital conversion

Digital-to-analog converters (DACs), on the other hand, convert digital data to analog form, just the opposite of an ADC (Figure 2). This capability allows digital control to drive analog loads, such as electromechanical actuators.

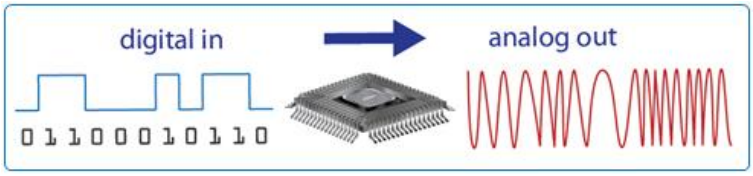

Figure 2: Digital-to-analog conversion

Radiation Hardening

Integrated circuit (IC) design methods involve the use of matched pairs of transistors that need to adapt to normal process variations to yield consistent performance. Radiation in space damages microelectronic components by causing uneven current “leakage” from transistors, and offset voltage shifts that cause processing errors in systems. With sustained exposure, the components will degrade and eventually fail. Radiation hardening involves applying design methods that minimize the impact of the radiation. These methods are broadly grouped as rad-hard by design (RHBD), rad-hard by process (RHBP), or rad-hard by shielding (RHBS). In most cases, all three methods are employed to reduce system vulnerability.

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