



EMCORE Announces New SDI170 Quartz MEMS Tactical Grade Inertial Measurement Unit for Replacement of Legacy Ring Laser Gyro Products

April 28, 2021

ALHAMBRA, CA, April 28, 2021 (GLOBE NEWSWIRE) -- EMCORE Corporation (Nasdaq: EMKR), a leading provider of advanced mixed-signal products that serve the aerospace & defense and broadband communications markets, announced today the introduction of its new SDI170 Quartz MEMS (Micro-Electromechanical Systems) Tactical Grade Inertial Measurement Unit (IMU) designed as a form, fit, and function compatible replacement for the HG1700-AG58 Ring Laser Gyroscope (RLG) IMU, but with superior overall performance, versatility, and a significantly higher MTBF (Mean Time Before Failure) rating over ruggedized environments.

EMCORE's SDI170 IMU is ideal for continuous use applications with no wear-out components and delivers highly linear accelerometer performance and longer life compared to the HG1700 IMU. It is non-ITAR (International Traffic in Arms Regulations) controlled and has completed extensive internal and external customer testing to confirm compatibility to replace legacy products. The unit is designed for a wide range of high-precision, integrated commercial and defense applications including aircraft AHRS (Attitude Heading Reference Systems), GPS-aided navigation, ground surveying, mobile mapping, ROVs, autonomous vehicles, tactical weapons, and stabilization platforms.

"The introduction of the SDI170 IMU marks a significant milestone in the industry and for EMCORE. Now customers everywhere in the world have sourcing options for this widely used tactical performance package," said David Hoyh, EMCORE's Director of Sales & Marketing for navigation products. "The SDI170 IMU enables us to deliver higher performance at lower cost to the market in a form-factor and electrical interface that is a seamless replacement for an older technology legacy RLG IMU," added Mr. Hoyh.

EMCORE's SDI170 IMU performs in highly dynamic $\pm 1,074$ deg/sec and ± 50 G standard (± 70 G optional) linear acceleration conditions and delivers $1^\circ/\text{hr}$ gyro bias and 1 mg accelerometer bias stability with very low $0.02^\circ/\sqrt{\text{hr}}$ Angle Random Walk (ARW) over a wide -55°C to $+85^\circ\text{C}$ temperature range in vibration environments. The ARW performance of the SDI170 is 5X better than the legacy RLG IMU it is designed to replace, and its tactical performance is based on the dependable, accurate quartz MEMS inertial sensor technology in EMCORE's SDI500 tactical grade IMU¹. EMCORE's quartz technology enables repeatable high-volume production of precisely machined sensor structures combined with the inherent large signal output and thermal stability of quartz materials.

In addition to EMCORE's latest generation solid-state hermetically sealed quartz gyroscopes and accelerometers, the SDI170 IMU (like the HG1700-AG58) communicates using the high-speed SDLC protocol over the industry-standard RS-422 electrical interface for seamless compatibility and outstanding precision performance. With continuous BIT (Built-in Test) monitoring and EMI (Electromagnetic Interference) protection designed into a compact 33 cubic inch package, EMCORE's SDI170 will provide reliable 20-year operating and storage life without calibration in demanding, mission-critical environments.

The SDI170 is expected to be available for high-rate order shipment with short lead times beginning in June 2021.

For further information and specifications on EMCORE's SDI170 IMU and our complete line of navigation products, call +1 866-234-4976; e-mail: navigation-sales@emcore.com; or visit us on the web: www.emcore.com/nav.

1. See [EMCORE IMU Trade Study "Quantifying Quartz MEMS in High Performance, Dynamic Environments"](#) where extensive testing revealed the HG1700 integrated error is larger than EMCORE's Quartz MEMS IMUs by one order of magnitude in vibration and temperature environments.

About EMCORE

EMCORE Corporation is a leading provider of advanced mixed-signal products that serve the aerospace & defense and broadband communications markets. Our best-in-class components and systems support a broad array of applications including navigation and inertial sensing, defense optoelectronics, broadband transport, 5G wireless infrastructure, optical sensing, and cloud data centers. We leverage industry-leading Quartz MEMS, Lithium Niobate, and Indium Phosphide chip-level technology to deliver state-of-the-art component and system-level products across our end-market applications. EMCORE has vertically-integrated manufacturing capability at its wafer fabrication facility in Alhambra, CA, and Quartz MEMS manufacturing facility in Concord, CA. Our manufacturing facilities maintain ISO 9001 quality management certification, and we are AS9100 aerospace quality certified at our facility in Concord. For further information about EMCORE, please visit <http://www.emcore.com>.

Forward-looking statements:

The information provided herein may include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, as amended. Such statements include statements regarding EMCORE's plans, strategies, business prospects, growth opportunities, changes, and trends in our business and expansion into new markets. These forward-looking statements are based on management's current expectations, estimates, forecasts, and projections about EMCORE and are subject to risks and uncertainties that could cause actual results and events to differ materially from those stated in the forward-looking statements, including without limitation, the following: (a) uncertainties regarding the effects of the COVID-19 pandemic and the impact of measures intended to reduce its spread on our business and operations, which is evolving and beyond our control; (b) the rapidly evolving markets for EMCORE's products and uncertainty regarding the development of these markets; (c) EMCORE's historical dependence on sales to a limited number of customers and fluctuations in the mix of products and customers in any period; (d) delays and other difficulties in commercializing new products; (e) the failure of new products: (i) to perform as expected without material defects, (ii) to be manufactured at acceptable volumes, yields, and cost, (iii) to be qualified and accepted by our customers, and (iv) to successfully compete with products offered by our competitors; (f) uncertainties concerning the availability and cost of commodity materials and specialized product components that we do not make internally; (g) actions by competitors; and (h) other risks and uncertainties discussed under Item 1A - Risk Factors in our Annual Report on Form 10-K for the fiscal year ended September 30, 2020, as updated by our subsequent periodic reports. Forward-looking statements contained in this press release are made only as of the date hereof, and EMCORE undertakes no obligation to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise.

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Source: EMCORE Corporation