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TECH NOTES FROM DTS THE LEADER IN DYNAMIC DATA ACQUISITION SYSTEMS & SMART SENSORS

DataPoint

LOOKING FOR A DAS PARTNER?

ISSUE 02
2011

this issue

PRODUCTS

DTS offers a full line of dynamic data acquisition systems and smart sensors for high shock testing.

SERVICES

24/7 Worldwide Tech Support
ISO 17025 Calibration
Calibration & Repair Services
Application Support
Software Integration
OEM/Embedded Applications

TECH CENTERS

Seal Beach, California USA
Novi, Michigan USA
Sydney, Australia
Shanghai, China
Zorge, Germany
Tokyo, Japan

ONE REQUIREMENT—Think Outside the Box

For over 20 years DTS has been known for its technical innovation, insights into challenging environments and responsiveness to customer's needs. In addition to the core product line which has grown steadily over the years, DTS has embarked on several joint R&D partnerships which have resulted in new products, many Small Business Innovative Research (SBIR) awards and a variety of new applications.

If you have a project with unique DAS and/or sensor applications, please contact DTS to see if we are the right partner.

Recent commercial R&D partnerships include:

Flex Pedestrian Leg – DTS partnered with Humanetics Innovative Solutions to integrate the SLICE NANO miniature data acquisition system. The Flex leg is fired at 40 km/hr from a launcher or used in full-scale vehicle tests. Several accessory products have also been created to support unique testing requirements in Asia and North America.

12 channels of SLICE NANO™ installed in Flex pedestrian leg

Angular Rate Sensor – DTS worked with Aberdeen Proving Grounds, U.S. Army, on a miniature, high-performance rate sensor with a high shock tolerance and DC response for a wide range of embedded test applications. Commercially available in 2011.

Seismic Recorder – DTS partnered with NGI in Norway on development of a low power, 24-bit data recorder for deep sea seismic testing. The system also features GPS logging.

Helmet Blast Sensor & Data Recorder – DTS continues partnership with BAE Systems to develop data recorder with integrated sensors and wireless capabilities that integrates into combat helmets to assist in the detection of traumatic brain injury. (Please see Page 2 for more details.)

TSR PRO Event Recorder – DTS worked with Eurotorp in France to create a small, lightweight, low-power, high-rate recorder with integrated sensors well suited for incident data collection, as well as structural and performance analysis. Currently three TSR models are available as standard DTS product (TSR, TSR PRO and TSR PRO-HB).

Government SBIR projects include:

Shock & Blast Recorder for Combat Helmets – DTS worked with Air Force Research Lab, Wright Patterson AFB in 2006 and again in 2009 on a special project for the Eject Detection System for Night Vision Goggles.

Low Power, 50 kg Shock Recorder (ASPIRE: A Survivable, Programmable, Integrated Recorder for Experiments) – DTS partnered with the Air Force Research Lab, Eglin AFB from 2007 to 2011.

Consolidated Six-Dimensional Sensor Package (6DSP) U.S. Department of Transportation in 2007.

1 MHz Personnel Data Recorder – From 2009-2012 DTS is committed to working with the U.S. Army Medical Research and Materiel Command on this R&D project.

100 kg, 1 MHz Shock Recorder – DTS partnered with the Defense Threat Reduction Agency in 2010.

Call DTS at +1 562 493-0158 or email sales@dtsweb.com to discuss your R&D project.

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TECH NOTE

Q: How often do I need to calibrate my equipment?

A: DTS recommends annual calibration or as required by testing regulations.

Factory calibration protects your TDAS & e-SENSING investment and includes:

- Compliance with SAE J211 and ISO 6487
- Battery replacement
- Signal amplitude linearity testing
- Anti-alias filter performance validation
- System time base and event timing validation
- Excitation accuracy and overload protection validation
- ISO 17025 service available on TDAS PRO, TDAS G5 and ARS
- On-site calibration available worldwide

DTS SPOTLIGHT

Randy Boss joins team DTS as Program Manager with a focus on SBIR and military projects. With over 26 years of experience, Randy worked on the C-17 Globemaster flight ramp, at several NASA facilities and has directed complete product life cycles from initial market review to end-of-life.

Randy.Boss@dtsweb.com

IN-DUMMY DAS: Small Enough to Fit Child ATDs

SLICE NANO complements the TDAS G5 in-dummy DAS solution and is strongly suited for the child series of crash test dummies. SLICE offers the most advanced technical design of any DAS system in production.

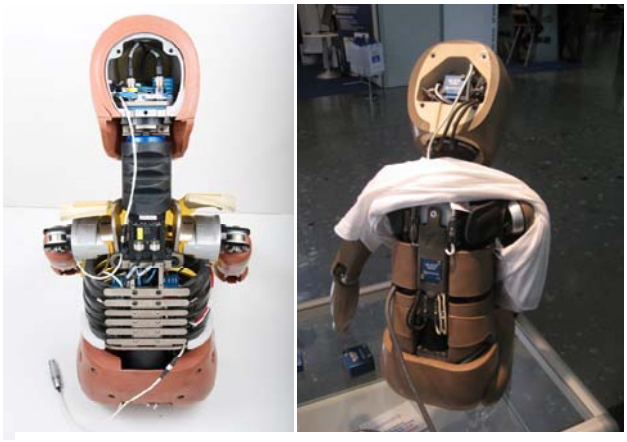
Offered in 3-channel increments, the SLICE NANO system is easily distributed within the crash dummy, maximizing testing potential and reducing test set-up time. It is also the most cost effective solution for new dummy purchases as well as retrofitting existing dummies because all existing sensors plug seamlessly into the SLICE NANO unit.

SLICE NANO Stack Cover

BRIDGE SLICE (max 8 per stack)
3-Channel Sensor Input Blocks
(up to 24 channels/stack and thousands per test set-up)

BASE SLICE (1 per stack)
Microprocessor and memory

Back-Up BATTERY (Optional)



Hybrid III 6-year-old (left) with a 33-channel SLICE NANO System
(9 channels in the head, 20 channels in thorax and 3 channels in pelvis)

Q1.5 18-month-old (right) with a 15-channel SLICE NANO System
(9 channels in the head/neck and 4 channels in thorax)

The extremely small 26 x 31 mm footprint, configuration flexibility and system reliability make SLICE NANO the new in-dummy DAS of choice. SLICE also offers easy set-up and an intuitive software interface. In addition, SLICE NANO is ideal for a variety of other in-dummy applications including free-motion head forms and the Flex pedestrian leg.

PROJECT SPOTLIGHT

U.S. Army Combat Helmet Sensors Gather Blast Exposure Data

In 2008 DTS created the first generation "smart sensor" installed in 7,000 helmets distributed to the U.S. Army. Today, the second generation includes over 20,000 units.

BAE Systems (Phoenix, AZ) and DTS have partnered on Phase 2 of a military contract for the Headborne Energy Analysis and Diagnostic Systems (HEADS). HEADS is a helmet sensor system that fits into virtually any helmet.

The HEADS device, designed by DTS, measures impact direction, magnitude, pressure, angular and linear accelerations, as well as the exact time and duration of single or multiple events.

HEADS Gen II Key Features:

- Small: 3 x 4 x 5/16 in (76.2 x 101.6 x 7.9 mm)
- Can be secured in virtually any combat helmet
- Lightweight and imperceptible to the wearer
- Measures and stores 3 axis of linear and angular rate data
- New ultra low-power pressure sensor
- Motion activated, hibernates when not worn
- Continuous, automatic data collection and storage of up to 1 Gigabyte of data
- Tri-color status LED
- Wireless RFID technology
- Extended battery life up to 12 months

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