

HEADS

Headborne Energy Analysis & Diagnostic System

In modern day conflicts, the risks that our warfighters are exposed to are constantly changing and becoming increasingly more destructive. As the immediate threat from IEDs and other risks is obvious, the less subtle, longer term impact is difficult to quantify.

BAE Systems has developed a modular helmet-integrated sensor package to record the severity of impacts to the head. The system has been developed to help understand the forces observed

during blast, ballistic, crash, and blunt impact events. The HEADS system collects sudden acceleration in the X, Y, and Z axes as well as overpressure data. Collecting and understanding data about the type and magnitude of impacts is important information that can be used to design better protective systems and to assist in medical diagnoses and treatment of head and brain injuries.

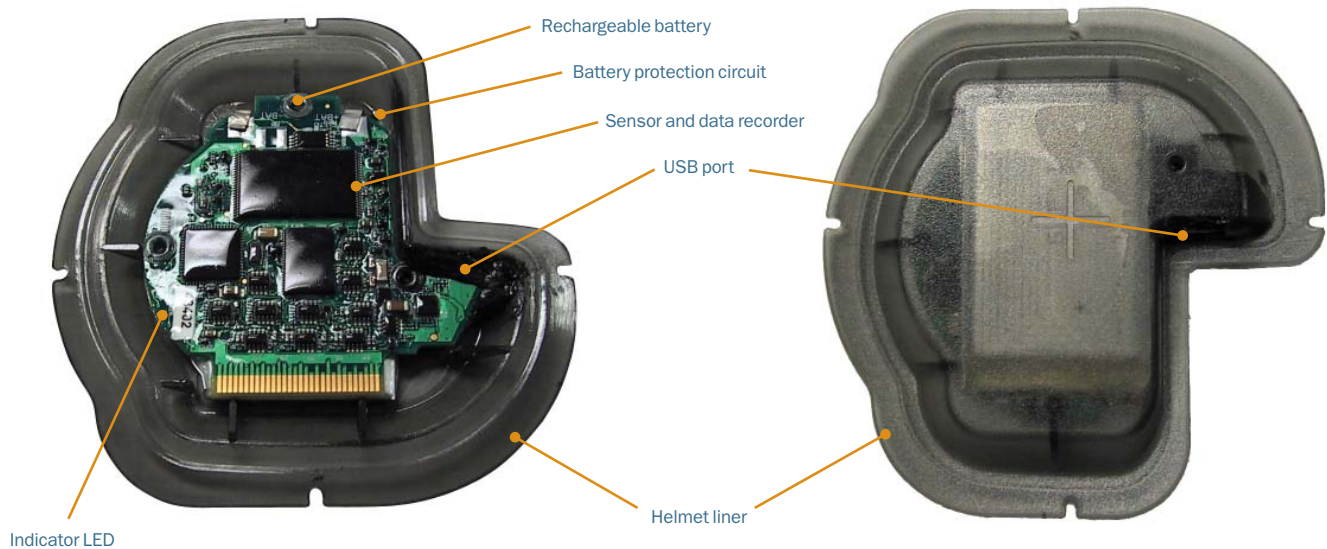
KEY FEATURES

Small, unobtrusive sensor package that can be mounted inside most helmet types

Utilizes COTS rechargeable or replacement batteries

Constant, automatic data collection

One size fits all helmet systems



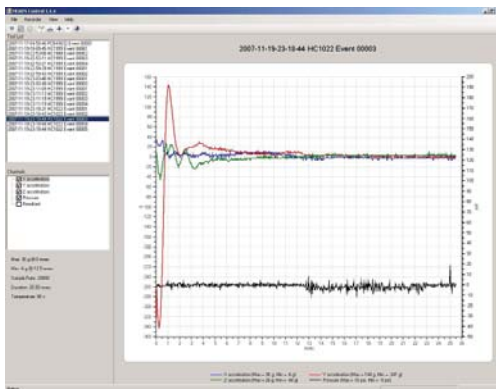
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System Features

- Four channel micro data recorder (3 acceleration and 1 pressure)
- Embedded 3 axis piezo accelerometers with +/- 5000+ G range and 5 kHz frequency response
- Embedded pressure sensor with ≥ 100 psia range and 100 μ sec response
- Maximum of 512 milliseconds of storage capacity for single event capture at a sampling rate of 20 kHz/channel
- Factory programmable sensor level trigger for event capture
- Unit automatically re-arms after event; no limit on number of events captured within 512 MB memory limits with data stored directly to flash memory
- Power via rechargeable Commercial off-the-shelf (COTS) battery integrated into system packaging
- PC communication/data download via standard micro USB port
- Multiple units can be downloaded simultaneously
- Production software for download, review, and data analysis
- Each event is stored with serial number, date, and time stamp
- Complete system including mount approximately 3 1/4" x 3 1/4" x 1/4"



FOR MORE INFORMATION CONTACT:

BAE Systems
7822 South 46th Street
Phoenix, AZ 85044 USA
Telephone 602-659-9600
Toll Free 800-318-7550
Fax 602-659-9601
Email ss.support@baesystems.com
www.baesystems.com/individual

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