

APPLICATIONS

- Biomechanics
- Embedded monitoring
- Ejection seats
- Helicopter rotors
- High value asset monitoring
- Impact testing
- Manufacturing
- Medical monitoring
- Munitions
- Packaging
- Parachute deployment
- Rockets
- UAS/UAV
- Vibration testing

PRODUCTS

Diversified Technical Systems designs and manufactures data acquisition systems and sensors for experienced test professionals.

DDR

Miniature, Ultra-Low Power 6DOF Data Logger Includes Triaxial Linear and Triaxial Angular Accelerometers



Weighs <0.1 ounce!

The DDR is a standalone 6-degrees-of-freedom (6DOF) data logger that measures linear and angular acceleration. The ultra-light logger is designed to monitor short duration events in small devices under test.

Features

- Embedded 3-axis linear accelerometer
- Embedded 3-axis rotational accelerometer
- Real time clock (RTC) time and temperature stamp
- Smart low power modes extend battery life
- Programmable trigger on acceleration threshold, automatically re-arms for next event
- Programmable sampling rate and anti-alias filter:
 - 100 to 5500 samples/sec/channel
 - AA filter set to ~1/4 the sample rate
- Programmable event duration with pre-trigger data buffer
- Non-volatile data memory; 100,000 samples per channel

Sample Rate	Event Duration	Stored Events
100 sps	4 sec	250 (max)
500 sps	0.5 sec	400 (max)
5000 sps	0.1 sec	200 (max)

- Environmental rating: IP67
- Easy to use software
- Data exports to ASCII CSV for easy import to Excel, MATLAB or other post analysis software

The DDR (Dynamic Data Recorder) is the smallest, ultra-low power data event logger available. The standalone shock and vibration logger is designed to be embedded on or in devices under test, without altering usage or test dynamics. The DDR is configured as a bare flex circuit with built-in sensors and non-volatile flash memory. Bluetooth communication and wireless inductive charging make the DDR one of the most innovative data acquisition solutions available.



The DDR is a flex circuit that can be laid flat or curved around an object. Wireless communication and charging make the DDR ideal for field testing.

Software

DDR Control software provides easy-to-use tools for test setup and viewing events. Designed for speed and simplicity, DDR Control lets users configure the recorder, view real-time sensor output and review time-history data.



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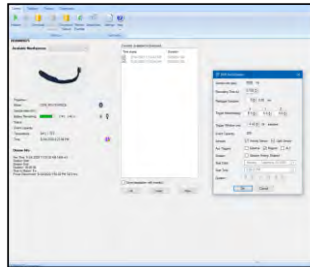
Specifications

PHYSICAL		TRIGGERING	
Size:	100 x 9 x 4.5 mm (3.94" x 0.35" x 0.18")	Software Trigger:	Programmable level trigger on each axis
Weight:	2.5 g (0.09 oz.)	POWER	
ENVIRONMENTAL		Battery:	27 mAh NiMH; Inductive rechargeable
Operating Temperature:	-20 to 60°C	Active Mode*:	8 hrs**; System always armed, Collects 170 pre-trigger data points/channel 90 hrs
Humidity:	100% RH	Sleep Mode:	90 hrs
Shock:	10000 g operating/survivable	Charge Time:	6 hrs (Inductive)
IP Rating:	IP67	Charger:	DTS inductive charging unit required
MEASUREMENT CHANNEL OVERVIEW		CALIBRATION	
Sensors:	Triaxial DC response linear accelerometer, ±200g or ±400g Triaxial DC response angular accelerometer, ±15000 rad/sec ²	Calibration:	NIST traceable
Influence of Linear Acceleration on Rotational Acceleration Measurement:	Axis 1: ±40 rad/sec ² /g Axis 2: ±40 rad/sec ² /g Axis 3: ±10 rad/sec ² /g	ISO 17025:	ISO 17025 (A2LA Accredited) available
Anti-Alias Filters:	4-pole Butterworth	Service Options:	Factory, On-site & Service Contracts available
Data Conversion:	12-bit ADC	SOFTWARE	
Programmable Sampling:	100 to 5500 samples per second/channel	Control:	DDR Control
Pre-Trigger Data:	adjustable samples per channel	Data Management:	Date/Time/Temp recorded for each event
Memory:	8 Mb non-volatile; 100000 samples/channel	Post-Processing:	SAE Filters, View multiple channels/tests
		Operating Systems:	Windows® 7/8/10 (32- and 64-bit)
		Communication:	Bluetooth 4.0 to USB adapter

*NOTE: Battery life will vary based on application, duty-cycle and sampling rate.
Contact a DTS sales engineer to determine the best product and estimated battery life for your specific application.
** Estimate based on potential low temperature operation and/or older battery (actual may be longer).

SERVICES

24/7 Worldwide Tech Support
ISO 17025 (A2LA) Calibration
On-site Calibration & Training
Application Support
Software Integration
OEM/Embedded Applications



DDR Control Software makes it easy to manage test set-ups, view data and monitor charging status via the DTS inductive charging case.



Application: Pharmaceuticals & Packaging



The Challenge:
Measuring shock and vibration on small, lightweight articles during manufacturing or shipping.

The Solution:
Weighing only 2.5 grams, the DDR can be used to create a "golden" unit that has the same size and weight as the actual product. The instrumented unit can then be run through the automated assembly line or shipping process to record the exposure.

Application: Injury Research



The Challenge:
Measuring 6-degrees-of-freedom injury biomechanics data in the field.

The Solution:
Custom mouthguards with an embedded DDR provide accurate head kinematic measurements with good coupling to the upper jaw and skull. Each mouthguard is fitted to a single user and charged wirelessly via the inductive charging case (shown above).

WORLDWIDE SUPPORT

HELP CENTER (24/7/365 Access)
DTS Technical Centers
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