



TSR AIR

**Universal Data Logger with Built-In 6DOF Sensors
Onboard Recording & Real-Time Streaming**

Overview

The TSR AIR is a high-performance data logger with built-in 6-degree-of-freedom (6DOF) sensors designed for collecting shock and vibration data in harsh test environments. Compact and self-powered, the rugged system is ideal for unattended monitoring of shock, vibration and other parameters with multiple triggered-event capabilities.

Simple and reliable, the TSR AIR is “always on” and ready to record. An advanced sleep mode “wakes” for an event trigger, collects data to flash memory, then automatically re-arms and returns to ready mode to capture the next event.

TSR AIR Applications Include: Shock & Vibration Analysis, In-Flight Testing, UAV/Drones, Parachute Deployment, Engine Vibration, Vehicle Crash, Transportation Monitoring and High-Value Asset Tracking

Features

- Standalone data logger with built-in sensors and memory
- Small and lightweight for quick installation and testing
- Internal Sensors
 - Multiple accelerometer g-levels for full dynamic range
 - Angular rate sensors (high-rate gyroscope)
 - Environment sensors temperature and pressure
- Advanced “sleep & wake” feature extends battery life for months
- Wide operating temperature range of -40C to 60°C
- Data writes to flash memory (8 GB), stores 1000’s of events
- Programmable sampling rate from 100 to 20,000 sps
- User-programmable trigger modes; msec to hours for each event
- Unit-to-unit synchronization via IEEE 1588 PTP, IRIG or GPS
- Streaming format is IRIG 106 Chapter 10 compliant
- Simple, intuitive software for arming, downloading and viewing data

Configurations & Interface

Standalone



Networked via synchronized IEEE 1588 PTP



25-pin microD system connector
(Same pinout and functionality as SLICE6 AIR)



Specifications

MODELS		DATA RECORDING	
Standard:	Supports onboard recording to flash memory	Memory Capacity:	8 GB standard, flash non-volatile
Streaming:	Supports onboard recording & real-time streaming	Sleep:	Advanced motion detection for power savings
PHYSICAL		Sampling Rate:	Programmable 100 to 20k sps
Size:	43 x 43 x 15 mm (1.69 x 1.69 x 0.59")	Data Collection Modes	
Weight:	50 grams (1.8 oz)	Active:	Circular buffer waiting for trigger
Connector:	25-pin microD (Ethernet, Power, I/O, IRIG, GPS)		Pre-trigger data is also recorded with event
Enclosure:	Anodized aluminum	Recorder:	No pre-trigger data (data collection starts in <2 msec)
ENVIRONMENTAL		Schedule:	Wake and record at a specified date and time
Operating Temp:	-40 to 60°C	Interval:	Wake and record at a specified interval of time
Shock:	500 g survivable	DATA STREAMING	
IP Rating:	IP67	Streaming Rate:	Programmable 100 to 20k sps
POWER / BATTERY		Format:	IRIG-106 Chapter 10 or TmNS*
Supply Voltage:	9 to 30 VDC, 2.5W minimum	TRIGGERING	
Battery Options:	Li-ion Rechargeable (350mAh)	Hardware Trigger:	Contact closure & TTL logic-level (active low)
EMBEDDED SENSORS		Software Level Trigger:	Programmable level trigger from internal sensors
Triaxial Low-g Accelerometer:	Primary application: Vibration Range: Programmable, ±6g, ±12g, ±25g, ±50g ADC: 16-bit, BW: 10 to 2000 Hz Piezoresistive, MEMS, DC response,	Trigger Modes:	Level, Schedule, Interval with High-g Accel
Triaxial High-g Accelerometer:	Primary application: Shock Range: ±400g ADC: 12-bit, BW: 160 to 640 Hz Piezoresistive, MEMS, DC response,	SOFTWARE	
Triaxial Angular Rate (Gyroscope):	Primary application: Angular Velocity Range: Programmable ±250 or ±2000 deg/sec ADC: 16-bit, BW: 10-180 Hz MEMS, DC response	Control:	DataPRO Software
Environmental Sensors:	Temperature: -40 to 85°C Pressure: 300 to 1100 hPa (4.5 to 16 psi)	Operating Systems:	Windows® 7/8/10 (32/64-bit), Linux
		Communication:	100M bps Ethernet, SLICE BUS compatible
		Export Options:	IRIG-106 (Chapter 10 or TmNS), CVS, etc.
		CALIBRATION	
		Calibration Supplied:	NIST traceable
		ISO 17025:	ISO 17025 (A2LA Accredited)
		Service Options:	Standard, On-site & Service Contracts available
		TIME SOURCE	
		IEEE 1588 PTP (Requires external power. First TSR AIR in chain acts as Grand Master for chained units)	
		IRIG-B122*	
		GPS RS232/422/485 & 1 PPS**	
		Internal RTC (5 ppm)	
		ACCESSORIES	
		See website for the full line of accessories	

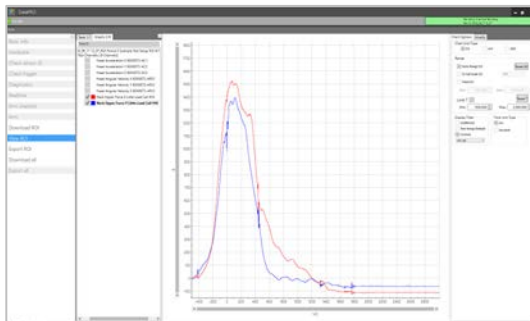
*Streaming format is IRIG 106 Chapter 10 compliant and requires 3rd-party Display Software
**Under Development

Software

TSR AIR is supported by multiple control software options:

DTS DataPRO Software: Easy-to-use Windows application designed specifically to support TSR AIR; includes sensor database, diagnostics, arming, downloading, data viewing and PSD analysis

API: Application Programming Interface (API) for user-developed application support



DataPRO Software



phone: +1 562-493-0158
email: sales@dtsweb.com
www.dtsweb.com