SLICE MICRO™ & SLICE NANO™
Miniature Data Recorders

APPLICATIONS

- Aerospace analysis
- Amusement ride testing
- Automotive safety
- Biomechanics
- Blast testing
- Embedded monitoring
- Helicopter & aircraft
- Impact testing
- In-dummy
- Injury investigation
- Parachute deployment
- Package testing: truck, air, ship & rail
- Pedestrian head & leg form
- Ride & handling
- Sound measurement
- Sports & safety equipment
- Vibration testing

PRODUCTS

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

SLICE MICRO and SLICE NANO are custom-configurable with 3-channel sensor input SLICEs that stack to create a standalone data acquisition system.

SLICE is a modular data acquisition system featuring unmatched flexibility, technology and reliability in an ultra-small size. Available in two configurations, both SLICE MICRO and SLICE NANO are ideal for a variety of critical test applications.
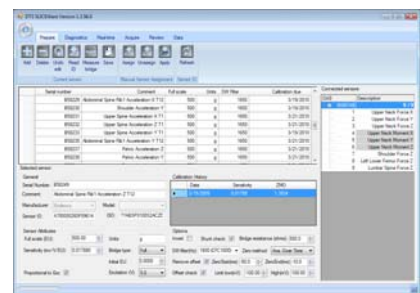
The foundation of the system is the BASE SLICE that contains the microprocessor, memory and all control circuits for managing multiple 3-channel SLICEs that can be stacked in different channel count and sensor input configurations. A simple interface provides power, trigger and communication signals for chaining multiple SLICE stacks and connecting to your PC.

SLICE MICRO data acquisition system shown in a 6-channel configuration that supports IEPE sensors.

Features

- Modular: SLICE modules can be stacked and daisy-chained to create the exact feature and channel combination needed. Add up to 24 channels per stack and up to thousands of channels per test.

- Intuitive, easy-to-use software

- Lightweight & extremely small

- Records up to 120 ksps/channel

- 7 GB non-volatile flash memory

- Supports a variety of external sensor interfaces: 3- and 4-wire bridge, MEMS sensors, strain & load, voltage, temperature, digital/frequency

- SLICE MICRO can also be configured with built-in triaxial sensor modules for acceleration, angular rate, or external IEPE (piezo-electric) sensors

- Meets NHTSA, FAA, ISO 6487 and SAE J211 data acquisition practices

Software

SLICEWare set-up and control software provides fast, easy-to-use tools for storing sensor information and performing data collection. Advanced features such as automatic sensor assignment, detailed channel diagnostics, and real-time data display support successful testing and quality data every time.

DTS
Advanced Measurement Solutions
www.dtsweb.com

Specifications

BASE SLICE (MICRO & NANO)

Size:	MICRO 42 x 42 x 8 mm (1.65 x 1.65 x 0.32")
	NANO 26 x 31 x 6.5 mm (1.02 x 1.22 x 0.26")
Weight:	MICRO ~28 g (0.99 oz), NANO ~14.2 g (0.50 oz)
Connectors:	Omnetics, circular locking, 12-pin
Connectors:	MICRO integrated, NANO cable assembly

ENVIRONMENTAL

Operating Temp.:	0 to 60°C (32 to 140°F)
	Call to discuss extended temperature ranges
Humidity:	95% RH non-condensing
Shock:	500 g, 4 msec half sine
	5000 g option (SLICE NANO)
	50,000 g option (SLICE HG)

DATA RECORDING

Modes:	Recorder or circular buffer modes available
Memory:	7 GB non-volatile flash per SLICE stack
Sample Rate:	Up to 120 ksps/channel
	Individual channel sample rate is determined by number of SLICEs in each stack

TRIGGERING

Hardware Trigger:	Isolated contact closure & logic-level input
Level Trigger:	Software programmable from any channel(s)

POWER

Supply Voltage:	9-15 VDC; >11 VDC when using BATT SLICE
Current (Maximum):	100 mA. Each additional SLICE unit requires additional power (depends significantly on connected sensor load)
Power Control:	Remote power control input for on/off
Protection:	Reverse current, ESD

SOFTWARE

Control:	SLICEWare, API
Operating Systems:	Windows® XP/Vista/7
Communication:	USB; optional Ethernet interface

BRIDGE SLICE (MICRO & NANO)

Size:	MICRO 42 x 42 x 7 mm (1.65 x 1.65 x 0.32")
	NANO 26 x 31 x 5.5 mm (1.02 x 1.22 x 0.22")
Weight:	MICRO ~25 g (0.88 oz), NANO ~13.8 g (0.49 oz)
Connectors:	Omnetics, circular locking; 3 single-channel 7-pin or 1 three-channel 16-pin

SIGNAL CONDITIONING

Number of Channels:	3 differential, programmable
Input Range:	±2.4 V (2.5 V center)
Bandwidth:	DC to 40 kHz, programmable
Gain Range:	1.0-1280, programmable
Auto Offset Range:	100% of effective input range
Bridge Support:	Software switchable completion
Shunt Check:	Emulation method

ANALOG-TO-DIGITAL CONVERSION

Type:	16-bit SAR, one ADC per channel

EXCITATION

Method:	One 20 mA current-limited source/channel
Voltage:	5.0 V
On/Off Control:	Shut down when not armed or recording
	Opt. pulsed excitation for low sampling rates

POWER

Voltage:	Supplied via BASE SLICE
Current (Maximum):	110 mA with 350 ohm bridges all channels
	Power will vary significantly with sensor load

ANTI-ALIAS FILTER

Fixed Low Pass:	4-pole Butterworth, standard knee frequency of 40 kHz
Adjustable Low Pass:	5-pole Butterworth set under software control, 50 Hz to 40 kHz
Overall Response:	Both filters may be used together to achieve 9-pole effective response
SAE J211:	System exceeds SAE J211 response

IEPE SLICE (MICRO Only)

Size:	MICRO 42 x 42 x 7 mm (1.65 x 1.65 x 0.28")
Weight:	~28 g (0.99 oz)
Connectors:	10-32 coaxial (Microdot-compatible)

SIGNAL CONDITIONING

Number of Channels:	3
Input Range:	0.5-23.5 V (12 V center)
Bandwidth:	DC to 40 kHz, programmable
Gain Options:	1 or 10, user programmable
Auto Offset Range:	100% of effective input range at gain of 1

ANALOG-TO-DIGITAL CONVERSION

Type:	16-bit SAR, one ADC per channel

EXCITATION

Method:	One 2.2 mA constant-current source/channel
Voltage:	Up to 24 V
On/Off Control:	Shut down when not armed or recording

POWER

Voltage:	Supplied via BASE SLICE
Current (Maximum):	70 mA with sensors connected to all channels

ANTI-ALIAS FILTER

Fixed Low Pass:	4-pole Butterworth, standard knee frequency of 40 kHz
Adjustable Low Pass:	5-pole Butterworth set under software control, 50 Hz to 40 kHz
Overall Response:	Both filters may be used together to achieve 9-pole effective response

ARS SLICE (MICRO Only)

Size:	MICRO 42 x 42 x 9 mm (1.65 x 1.65 x 0.35")
Weight:	~30 g (1.06 oz)
Number of Channels:	3
Range Options:	Triaxial, ±300, 1500, 8k, 12k, 50k deg/sec
Current (Maximum):	75 mA (power supplied via BASE SLICE)

ACCEL SLICE (MICRO Only)

Size:	MICRO 42 x 42 x 9 mm (1.65 x 1.65 x 0.35")
Weight:	~30 g (1.06 oz)
Number of Channels:	3
Range Options:	Triaxial, ±50, 100, 500 g
Current (Maximum):	65 mA (power supplied via BASE SLICE)

BATTERY SLICE (NANO Only)

Size:	NANO 26 x 31 x 4 mm (1.65 x 1.65 x 0.16")
Weight:	~7 g (0.25 oz)
Charge Status:	Backup battery charges when input voltage to BASE SLICE is greater than 11 VDC
Charge Time:	~15 min. from complete discharge to full charge (100 mA at input connector on Base)
Discharge Rate:	~16 seconds at 1 A
	~2 minutes at 400 mA