SLICE MICRO™ & SLICE NANO™
Miniature Data Recorders

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

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.

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.

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.
## 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)
- **Humidity:** 95% RH non-condensing
- **Shock:** 500 g, 4 msec half sine
  - 5000 g option (SLICE NANO)
  - 50,000 g option (SLICE HS)

### DATA RECORDING
- **Modes:** Recorder or circular buffer modes available.
- **Memory:** Up to 120 kbps/channel
  - Individual channel sample rate is determined by number of SLICEs in each stack
- **Sample Rate:** Up to 120 kbps/channel

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

### SOFTWARE
- **Control:** SLICEWare, API
- **Operating Systems:** Windows XP/Vista/7
- **Communication:** USB; optional Ethernet interface

### 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

### ANTI-ALIAS FILTER
- **Adjustable Low Pass:** 5-pole Butterworth set under software control, 50 Hz to 40 kHz
- **Fixed Low Pass:** 4-pole Butterworth, standard knee frequency of 40 kHz

### 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, ±300, 1500, 8k, 12k, 50k deg/sec
- **Current (Maximum):** 75 mA (power supplied via BASE SLICE)

### 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:** ±2.4 V (2.5 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

### BATTERY SLICE (NANO Only)
- **Size:** NANO 26 x 31 x 4 mm (1.02 x 1.22 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
- **Discharge Rate:** ~16 seconds at 1 A
  - ~2 minutes at 400 mA

### ARS SLICE (MICRO Only)
- **Size:** MICRO 42 x 42 x 14 mm (1.65 x 1.65 x 0.55")
- **Weight:** ~28 g (0.99 oz)
- **Number of Channels:** 3
- **Range Options:** Triaxial, ±300, 1500, 5k, 12k, 100k deg/sec
- **Current (Maximum):** 100 mA (power supplied via BASE SLICE)

### 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 Options:** 1 or 10, user 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):** 300 ohm bridges all channels
  - Power will vary significantly with sensor load

### BATTERY SLICE (NANO Only)
- **Size:** NANO 26 x 31 x 4 mm (1.02 x 1.22 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