SLICE PRO
Modular, Miniature, High-Speed Data Acquisition System

SLICE PRO records as low as 100 samples/second and up to 1 million samples/second/channel, with up to 200 kHz analog bandwidth. Shown in a 72-channel configuration, modules can be used standalone or systems can be daisy-chained for large channel count tests.

SLICE PRO is the new standard in shock-hardened, mega-sample data acquisition systems with unmatched flexibility, accuracy and reliability in an ultra-small form factor. Based on the proven architecture of SLICE, the new SLICE PRO takes every feature and function to the next level, delivering a powerful and expandable system ideal for a variety of critical test applications.
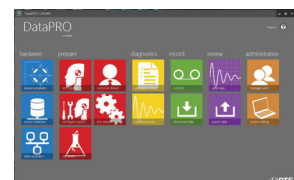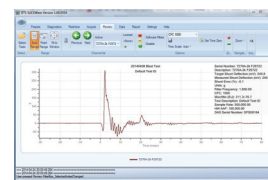

The SLICE PRO Sensor Input Module (SIM) features 9 or 18 fully-programmable sensor input channels that provide power and signal conditioning for a variety of measurement types including bridge sensors (full, 1/2, 1/4), IEPE, internally amplified sensors, and simple voltage

APPLICATIONS

- Acoustic studies
- Aerospace analysis
- Automotive safety
- Biomechanics
- Blast dynamics
- Ballistics Research
- Helicopter & aircraft
- Parachute deployment
- Pyrotechnic shock
- Ride & handling
- Sound measurement
- Sports & safety equipment
- Vibration testing
- Wind Tunnel

PRODUCTS

Diversified Technical Systems designs and manufactures data acquisition systems, sensors, and software for beginning and advanced test professionals.

Features

- A complete solution with programmable sensor interface, adjustable filters, 16-bit ADC and Ethernet communication

- Two software options: SLICEWare and DataPRO Easy and intuitive, users enter sensor & sampling parameters and the software automatically sets-up the hardware.

- Modular, high-performance, low-mass, 100% shock tested

- Ultra-small 52 x 90 x 80 mm per 18 channel module

- User-selectable sampling rates up to 1M sps/channel

- Data bandwidth options up to 200 kHz

- Record from milliseconds to hours. Data stored directly to 16 GB non-volatile flash memory.

- Supports a variety of external sensors, including full and half-bridge sensors, strain gages, IEPE, voltage input, thermocouples, etc.

- Compatible with DTS TDAS PRO and TDAS G5 hardware

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

Software

DTS offers two great software options for all SLICE products that allow users to simply enter sensor information and sampling parameters and the software automatically sets-up the hardware. SLICEWare offers fast, easy tools for storing sensor information and performing data collection. DataPRO offers a full-featured database and user interface for tracking sensor information, creating test objects and test setups, performing diagnostic routines and running tests. Both software options feature the most advanced self-diagnostics available, plus support for EQX and numerous data exchange file formats.

www.dtsweb.com

Specifications

MECHANICAL/CONNECTORS

SLICE PRO SIM (Sensor Input Module)

Description:	DAS module with 9 or 18 channels
Size:	52 x 90 x 80 mm
Mass:	726 g (26 oz)
Sensor Connectors:	LEMO 1B or Tajimi rectangular. Insertion and removal tool available

SLICE PRO Ethernet Controller

Description:	Interface for start, status, event, power and 10/100 Ethernet communication signals
System Capability:	Each Controller supports up to 72 channels and provides interconnection compatibility with additional SLICE PRO systems, TDAS PRO & TDAS G5 systems. 100s of channels can be combined in one setup.
Start/Trigger Input:	Start: 5 V active high
	Trigger: Fully isolated contact closure with nominal 20 V open circuit voltage
Size:	26 x 90 x 80 mm
Mass:	425 g (15 oz)
Connectors:	COM: LEMO 2B 19-pin, Power: LEMO 2B 4-pin
	Note: Ethernet Controller "COM" ports are 100% compatible with TDAS PRO and G5 COM ports

INTERNAL BATTERIES - ALL MODULES

Type:	Lithium Polymer with built-in charger.
Run Time:	One hour fully armed, all channels in use with 5 V excitation (40 min. with 10 V excitation)
Recharge Time:	3-4 hours

SLICE PRO Base Plate

Description:	Aluminum mounting plate, multiple size options available depending upon configuration

POWER

Supply Voltage (SIM):	9-15 VDC; Note: 12-15 VDC required for charging internal battery
Power (Maximum):	15 W per 18-channel unit with 350 ohm loads and battery charging
Power Control:	Push button, not impact critical
Protection:	Reverse current, ESD

ENVIRONMENTAL

Operating Temp.:	0 to 60°C (32 to 140°F)
	Contact DTS for extended temperature applications
Humidity:	95% RH non-condensing
Shock:	100 g, 12 msec half sine

START & TRIGGER OPTIONS

Level Trigger:	Positive or negative level on any active sensor channel (first level crossing of any programmed sensor triggers system)
Software Trigger:	Data collection may be started or triggered via software

BRIDGE or VOLTAGE SENSOR INTERFACE

Type:	Differential Instrumentation Amplifier
Common Mode Range:	±3.5 V, centered 2.5 V above ground
Differential Input Range:	±2.5 V, centered 2.5 V above ground
Bandwidth:	DC to 200 kHz (see options in AAF section)
Gain Range:	1 to 12,000
Noise (SNR typical):	75-80 dB (100 kHz BW, typical gain)
Gain Check:	Automatic voltage Insertion
Linearity (typical):	0.1% (gain 1 to 400), ≤0.5% (gain ≥640)
Accuracy:	0.2% including reference uncertainty
Auto Offset Range:	2X effective input range at gain ≥2 (typical)
Excitation Voltage:	Off, 2.0, 5.0, 7.5 and 10.0 V selected in software
Excitation Current:	40 mA via independent current-limited source
Bridge Support:	3k ohm half-bridge completion. 120 or 350 ohm 3/4 bridge completion for strain gages, etc.
Shunt Check:	Emulation method, automatically calculated
Sensor ID:	Maxim Integrated (Dallas) "1-wire" silicon serial number

IEPE SENSOR INTERFACE (if so equipped)

Input Range:	0.5 to 23.5 V
Excitation:	4.0 mA constant current with 25 V source. Contact DTS for other options if needed.
Sensor ID:	Works with EID or "TEDS" equipped sensors

ANTI-ALIAS FILTERS (AAF)

Fixed Low Pass:	8-pole fixed Butterworth with factory configured maximum bandwidth.
	Options: 4.0 kHz, 100 kHz, 200 kHz
Adjustable Low Pass:	5-pole Butterworth set under software control: 50 to 45 kHz (bypassed for maximum bandwidth)
Custom Options:	Contact DTS for any special requirements
Overall Response:	System response complies with SAE J211/ ISO 6487 recommended practices

ANALOG-TO-DIGITAL CONVERSION

Type:	16-bit SAR (Successive Approximation Register) ADC, one per channel, simultaneous sample of all channels
Acquisition Time:	80 ns (min)
Conversion Time:	420 ns (max)

DATA RECORDING

Modes:	Recorder, circular buffer and multiple test modes available
Memory:	16 GB non-volatile flash per module
Sample Rate:	User-programmable from 100 sps to 1M sps
	Maximum 1M sps/ch with 9 channels used or 500k sps/ch with18 channels used per SIM

SOFTWARE

Control:	SLICEWare, DataPRO, API
Operating Systems:	Windows® Vista/7/8 (32- and 64-bit)
Communication:	Ethernet 10/100M

SLICE PRO is modular and configures to different channel counts and functions including airbag squib fire and triggering.

Additional Modules Available:

SLICE PRO TOM

The timed output module includes 4 fully-programmable firing outputs for airbags and pretensions, plus 8 independently-programmable, isolated digital outputs for synchronizing imagers and sequencing test operations.

SLICE PRO TDM

The trigger distributor module features 2 isolated inputs and 6 isolated outputs for synchronizing imagers, event marking devices and other electronic systems.