SLICE6 AIR is a complete data acquisition unit (DAU) for measuring analog signals in extreme test environments. Low size, weight and power (SWaP) optimized, SLICE6 AIR is designed for applications with space and mass constraints. Each module features a microprocessor, Ethernet switch, signal conditioning and flash memory. SLICE6 AIR can be used standalone, networked for high channel count tests or integrated into existing Ethernet-based flight test instrumentation. Added flexibility is supported with real-time streaming in IRIG formats (CH10 or TmNS) and/or onboard recording to flash memory.

SLICE6 AIR is designed and optimized for aerospace applications including: In-flight Testing, Ejection Seats, Biomechanics, Helicopter Rotors, Parachute Deployment, Munitions, Rockets, UAV/Drones, Space Capsules.

### Features

- Six-channel module, standalone or networked
- Small (42 x 42 x 13 mm) and low mass (50 grams)
- Designed to be near sensors, which reduces installation time and eliminates long cable runs
- Universal analog sensor signal conditioning: Bridge, IEPE, Thermocouple, RTD, Voltage, etc.
- Streaming and Store-in-Place recording
- Programmable sampling rates & anti-alias filters: Streaming: Max 20k sps on all channels Onboard Recording: Max 400k sps
- 16 GB direct-write, non-volatile flash memory
- Multiple software control interface options

### Interface

- 51-pin sensor input connector
- 25-pin system input connector

### Configurations

- Standalone
- Networked
- Centralized
### Specifications

#### Physical
- **Size:** 42 x 42 x 13 mm (1.65 x 1.65 x 0.51")
- **Mass:** 50 g (1.8 oz)
- **Connectors (Micro-D):** 51-pin with 6 universal sensor inputs, 25-pin for power, Ethernet (2-ports), and Control

#### Environmental
- **Operating Temp:** -40° to 80°C (-40° to 176°F)
- **Humidity:** 95% RH non-condensing
- **Shock:** 500 g, 3 msec half sine
- **Vibration:** 12 grms, 3 to 2k Hz
- **IP Rating:** IP65
- **EMI/EMC:** Standard protection for EMI, RFI and ESD (8kV)

#### Data Recording
- **Modes:** Recorder, Circular Buffer, Multiple Event
- **Memory:** 16 GB non-volatile flash
- **Sampling Rate:** Programmable up to 400k sps on all channels
- **Recording Time:** >50 minutes at max sample rate
- **Pre-Trigger Data:** Any part of memory can be used for pre or post trigger data.

#### Data Streaming
- **Sampling Rate:** Programmable up to 20k sps
- **Format:** IRIG Chapter 10 or TmNS

#### Bridge and IEPE Signal Conditioning
- **Bridge Input Range:** 0 to 5 volts (2.5 V center)
- **IEPE Signal Range:** 0.5 to 23.5V
- **Bandwidth:** DC to 50 kHz
- **Gain Range:** 1.0 to 1,280, software programmable
- **Auto Offset Range:** 100% of effective input range at gain > 2
- **Shunt Check:** Yes
- **Sensor ID:** Maxim Integrated (Dallas) silicon serial number
- **Linearity (typical):** 0.1% (gain 1 to 320), ≤0.5% (gain ≥640)
- **Accuracy:** 0.2% typical

#### Power
- **Supply Voltage:** 9-36 VDC
- **Current (Maximum):** < 3W with full sensor load
- **Protection:** Reverse current, ESD

### Excitation
- **Type:** Independent regulator for each channel
- **Bridge Voltage:** 5.0 V regulated, up to 20 mA per channel
- **IEPE Current:** 5 mA per channel (24V source)
- **Recovery:** Short circuit safe, recovers in <1 msec

### Pre-AD Anti-Alias Filters
- **Fixed Low Pass:** 4-pole Butterworth, standard knee at 50 kHz
- **Adjustable Low Pass:** 5-pole Butterworth set by software from 1 Hz to 35 kHz (bypass-able for maximum bandwidth)
- **Factory Options:** Bessel configuration, custom bandwidths

### Analog-to-Digital Conversion
- **Type:** 16-bit SAR (Successive Approximation Register) ADC, one per channel, simultaneous sampling of all channels in each module
- **Synchronization:** < 10 µsec, via IEEE 1588 PTPv2 or PPS (channel-to-channel entire system)

### Triggering
- **Hardware Trigger:** Contact closure & TTL logic-level (active low)
- **Level Trigger:** Positive and/or negative level on any active sensor channel (first level crossing of any programmed sensor triggers system)

### Software
- **DTS DataPRO Software:** Complete Windows application with sensor database, diagnostics, arming, downloading and data viewing
- **API:** Application Programming Interface (API) for user-developed application support
- **LabVIEW:** National Instruments LabVIEW driver for user-developed application support
- **IRIG Chapter 10/TmNS Streaming:** Supports direct UDP streaming of data from SLICE6 AIR

### Accessories
- See website for full line of accessories

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**DTS DataPRO Software**

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