

DOTS SLICE6 AIR

Networked Data Acquisition Unit
Real-Time Streaming & Onboard Recording

Overview

SLICE6 AIR is a complete data acquisition unit for measuring analog signals in extreme test environments. Optimized for size, weight and power (SWaP), SLICE6 AIR is ideal for applications with size and mass constraints. Each module features a microprocessor, Ethernet switch, signal conditioning and memory. SLICE6 AIR can be used standalone, networked for high channel count tests or integrated into existing Ethernet-based flight test instrumentation. Real-time streaming in IRIG formats and dual store-in-place recording expands test possibilities.

SLICE6 AIR applications include: In-Flight Testing, Ejection Seats, Helicopter Rotors, Parachute Deployment, UAV/Drones, Munitions, Rockets, Space Capsules and Injury Biomechanics.

Features

- 6-channel module, standalone or networked
- Ultra-small (42 x 42 x 13 mm); Low mass (50 grams)
- Designed to be positioned near the sensors, which reduces installation time and eliminates long cables
- Universal analog sensor signal conditioning:
 Bridge, IEPE, Thermocouple, RTD, Voltage, etc.
- Real-Time Streaming (CH10 or TmNS)
 Onboard Recording (16 GB non-volatile memory)
- Programmable sampling rates & anti-alias filters:
 Streaming: Max 20k sps on all channels
 Onboard Recording: Max 400k sps
- Multiple software control interface options

Interface

51-pin sensor input connector





25-pin system input connector

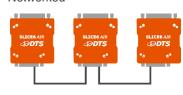


Configurations

Standalone



Networked



Centralized



www.dtsweb.com

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)

Military Standard: MIL-STD-810G, MIL-STD-461G

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.

Programmable up to 20k sps

DATA STREAMING

Sampling Rate:

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: 9-30 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 (24-volt source)
Recovery: Short circuit safe, recovers in <1 msec

PRE-A/D 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

Control: DataPRO, API, LabVIEW

Operating Systems: Windows® 7/8/10 (32/64-bit), Linux

Communication: 100M bps Ethernet with built-in IEEE-1588 compliant switch

CALIBRATION

Calibration Supplied: NIST traceable

ISO 17025: ISO 17025 (A2LA Accredited)

Service Options: Standard, On-site & Service Contracts available

TIME SOURCE

IEEE 1588 PTPv2

IRIG-B122

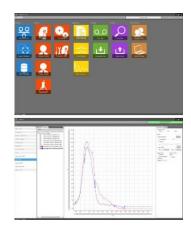
GPS RS232/422/485 & 1 PPS

ACCESSORIES

See website for full line of accessories

Software

SLICE6 AIR is supported by multiple control software options:



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





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