TDAS G5
32-Channel Standalone Data Recorder

APPLICATIONS

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

PRODUCTS

DTS offers a full line of data acquisition recorders and sensors for dynamic, high-shock testing.

The TDAS G5 Data Acquisition System is low mass, high speed and rated for severe impact conditions. The modular 32-channel TDAS G5 can be used for a variety of applications including in-dummy and on-vehicle.
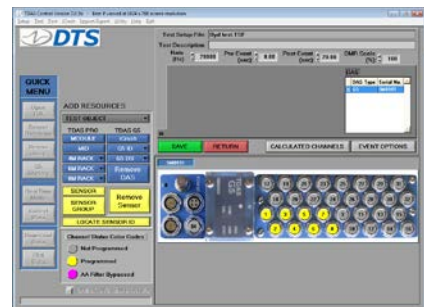
The TDAS G5 system by DTS has become the best selling data acquisition system of its kind. There is virtually no limit to the recording flexibility that the TDAS G5 product line offers. The ultra-small design makes it possible to record data in demanding environments that were once considered too difficult or dangerous. Small size, high sampling rates and an expanded range of ancillary products make the TDAS G5 the ultimate data acquisition system available.

Ancillary products include:
TDAS G5 Vehicle Docking Station
TDAS G5 Docking Port

Features

- Intuitive, easy-to-use software

- Modular, lightweight, small: 32 channel sensor inputs in a 25 x 54 x 85 mm, 200 gram package

- Durable, rugged, reliable: module factory tested to 500+ g Docking options factory tested to 100+ g

- 100 ksps per channel, high speed 16-bit ADC

- High-bandwidth options up to 40 kHz

- Fully programmable signal conditioning; gains from 1-4000

- Extended memory options available

- Sensor ID

- Integrates into current family of test dummies

- 100BaseT Ethernet & wireless communication options

- Certified to the NHTSA, FAA, ISO 6487 and SAE J211 data acquisition practices

Software

TDAS Control software provides 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 supports successful testing and quality data every time.

DTS
Advanced Measurement Solutions
www.dtsweb.com

Specifications

PHYSICAL

Module Size:	25 x 54 x 85 mm (0.98 x 2.13 x 3.35")
Weight:	200 g (7.05 oz)
Connectors:	1. Gold plated PCB contact method
	2. In-line connector options
	3. LEMO connectors with Vehicle Docking Station
	4. 4 D-Sub with Docking Port

ENVIRONMENTAL

Operating Temp.:	0-60°C (32-140°F)
Shock:	500 g peak, 4 msec half sine (TDAS G5)
	100+ g peak, 12 msec (docking options)

ANALOG INPUTS (32)

Type:	Differential, individually programmable
Maximum Input Range:	0.5-4.5 V
Bandwidth:	D.C. to 4 kHz (HB option = 40 kHz)
Protection:	EMI, RFI, ESD
Gain Range:	1.0-4000
Gain Accuracy:	0.2% - Automatically checked each use by precision voltage insertion
Auto Offset Range:	100% of effective input range
Bridge Support:	Yes, under software control

CALIBRATION

Features:	Software controlled voltage insertion and shunt emulation
Voltage Insertion:	
Type:	16-bit DAC
Accuracy:	0.1%, 100 ppm/°C, software compensated
Shunt Checks:	
Type:	16-bit shunt emulation
Accuracy:	0.1%, 100 ppm/°C, software compensated

EXCITATION

Method:	Independent, current-limited sources
Voltage levels:	5.0 V (Vehicle Docking Station 2.0 V, 5.0 V)
Accuracy:	0.1%
Rated Current:	20 mA per channel
Short Circuit Recovery:	<1 msec
On/Off Control:	Excitation sources turned on/off by software control to minimize power consumption

ANTI-ALIAS FILTERS

Fixed Low Pass:	4-pole Butterworth, standard knee frequency of 4.0 kHz (HB option = 40 kHz)
Adjustable Low Pass:	5-pole Butterworth set under software control, 50–5000 Hz (HB option = 40 kHz)
Overall Response:	Both filters may be used together to achieve 9-pole effective response
SAE J211:	System response exceeds SAE J211 requirements

DIGITAL INPUTS (32)

Type:	5 V logic input or contact closure with built-in pull-up resistor
Propagation Delay:	<0.05 msec
Protection:	EMI, RFI, ESD

DIGITAL COMMUNICATION BUS

Number of Avail. Lines:	One per channel plus 2 extra
Methodology:	Dallas (Maxim) 1-Wire®
Typical Uses:	Silicon serial number, TEDs, etc.

ANALOG-TO-DIGITAL CONVERSION

Type:	One SAR ADC per channel
Resolution:	16-bit
Max. Sampling Rate:	100k samples/sec/channel
Relative Accuracy:	± 4 LSB
Storage Technique:	Recorder or circular buffer modes available. Any portion of the memory may be allocated to pre-trigger data.
Memory Type/Capacity:	150 seconds at 10k samples/sec

TRIGGERING

TDAS G5:	Optically isolated input with trigger received LED indicator
Level Triggering:	Available from any channel(s) within each DAS module
Trigger Synchronization:	Control architecture supports multiple module installations

STATUS OUTPUTS

Recording:	5 V, 20 mA driver (for LED or opto-couplers)

POWER

Supply Voltage:	13.8 V nominal (11-15 V)
Maximum Power:	Approximately 800 mA per 32-channel system with 350 ohm bridges at 5.0 V excitation (depends significantly upon connected sensors)
Protection:	EMI, RFI, ESD, reverse current
Power Control:	Remote power control line for switching unit on/off

CONTROL SOFTWARE

Interface:	Ethernet 100BaseTX
Compatibility:	Standard TDAS Control Software
Operating Systems:	Windows® XP/Vista/7/8 (32/64-bit)

SERVICES

24/7 Worldwide Tech Support
Calibration & Repair Services
Application Support
Software Integration
OEM/Embedded Applications

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