

TMA 2000 - Turnkey Multi-Acquisition system



IN-SNEC®

Applications

- High performance Turnkey Data Acquisition System for flight tests of large aircraft
- Operates as Stand Alone, or in a Network Telemetry System
- Flight proven in Airbus A380 and A400M

High performance DAU for large Network Telemetry systems

Main Features

- OUTSTANDING METROLOGY
 - ◆ Better than 0.05 % FSR accuracy
 - ◆ Metrological bandwidth up to 20 kHz
 - ◆ Synchronous sampling within 140 ns
- NETWORKCENTRIC
 - ◆ UDP data packets
 - ◆ TCP/IP configuration & monitoring
- LARGE SIGNAL CAPACITY
 - ◆ 20 acquisition modules per chassis
 - ◆ Up to 16 chassis in a synchronous chain
 - ◆ Many types of acquisition modules
 - ◆ User programmable computing resources
- EASY TO INSTALL
 - ◆ Fits any 19 in. rack
 - ◆ Modules inserted from the front: no cables on modules
 - ◆ Sensors wired to the rear of chassis
 - ◆ Extensive self-test & monitoring

ZODIAC DATA SYSTEMS

AEROSAFETY & TECHNOLOGY
Telemetry & Telecommunications

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Installation

Mechanical

Rack mounted, in fuselage 19" wide, 4U height
 20 slots for acquisition modules
 Operating temperature -30°C to +55°C

Power Supply

400 W DC/DC converter, 24 – 32 VDC
 Built-in protection against 250 ms power loss

Connectors

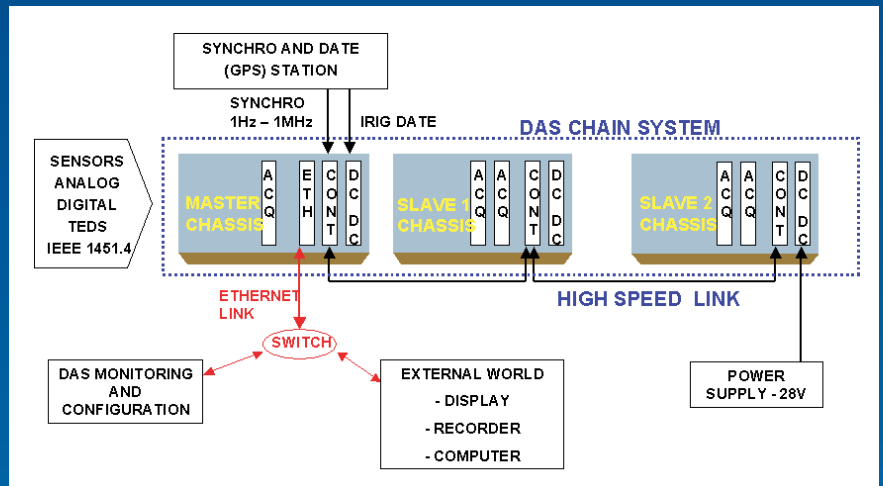
Sub D connectors on rear panel for inputs / outputs, with keying
 No signal connection on acquisition module to facilitate module installation
 Detection of missing connections

Common characteristics

Synchronous acquisitions between any channels installed in a chain (up to 16 chassis) better than ± 140 ns.
 6 byte date and time stamp with 1 μ s resolution
 Display of module status on the front panel
 Status monitoring at channel and board level

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Module specifications

Analog acquisition module

16 individually programmable channels
 Integrated programmable signal conditioning up to 20 mA
 Programmable input filters: 8th order Butterworth
 Specific firmware options: PT100, filtering, RMS, power, ...
 Input characteristics
 Range: ± 16 mV to ± 51 V, differential
 Accuracy: better than $\pm 0.05\%$ for input ranges above ± 64 mV, over full temperature range
 SNR: > 72 dB
 Metrological bandwidth: 2.3 kHz
 Sampling rate: programmable up to 16384 sps

Wide Band acquisition module

12 individually programmable channels:
 ICP with IEEE 1451.4, with 4 mA conditioning, or
 Differential analog inputs
 Sensor fault detection (open or short circuit)
 Programmable input filters: 8th order Butterworth
 Specific firmware options: RMS, power, ...
 Input characteristics
 Range: ± 128 mV to ± 10.2 V, differential
 Accuracy (ICP): better than $\pm 0.5\%$, over full temperature range
 Accuracy (differential analog): better than $\pm 0.1\%$, over full temperature range
 SNR: > 80 dB
 Metrological bandwidth: 20 kHz
 Synchronisation: ± 140 ns (between any 2 channels in a chain)
 Sampling rate: programmable up to 65536 sps.

RSxxx acquisition module

8 individually programmable RSxxx channels, per EIA 232/422/485 standards
 Data rate between 150 and 153600 bauds
 Synchronous or asynchronous operation
 Extensive filtering, User programmable processing
 Full duplex: supports smart sensor's protocols.
 User programmable processing

RS-1553 acquisition module

2 acquisition channels, as an RS422 input
 MIL-STD-1553 Bus Monitoring protocol
 Filtering on message structure, and inter-message gap
 Response time analysis, individual bus status

RS-CAN acquisition module

4 acquisition channels, as an RS422 input
 Filtering on message structure

ARINC429 acquisition module

16 individually programmable channels
 High or low speed
 8 and 10 bit labels and SDI acquisition
 Filtering on labels or transparent mode
 User programmable processing

Discrete acquisition module

36 individually programmable channels
 Combined sampling and event, time windowing
 Programmable thresholds (-10 V to +10 V)
 Maximum input voltage: ± 40 VDC

FCP acquisition module

8 individually programmable analog channels, for Frequency, Counter, or Period
 Programmable bandpass filter and thresholds
 Large choice of selectable input range: ± 16 mV to ± 51 V
 Frequency measurement (0 to 100 kHz) with 1 Hz accuracy
 Period measurement (0 to 655,350 μ s) with 1 μ s accuracy
 Counter (12, 16, 24 or 32 bits) with external trigger

RMS power measurement firmware

Optional firmware on analog modules
 1 channel RMS value, or 2 channels Power value (V x I)

ETHERNET module

System management

Configuration of all acquisition modules
 Synchronous chaining of up to 16 chassis
 Chassis monitoring on dedicated RS port
 Synchronize to IRIG B, 1 pps, 10 MHz time references

Data outputs

One 10/100baseT Ethernet port, with 1 electrical copy
 UDP Multicast, up to 20 Mb/s User data rate
 Supports all types of IENA packets

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Z.D.S. reserves the right to change specifications without notice - 11/27/2011