

UMA 2000 - Universal Multi-Acquisition system



Your Network-based DAU



IN-SNEC®

Main features

- Fully programmable
- 400 Mbps internal bus
- Bit rates to 25 Mbps
- 16 bits Resolution
- 2 Ethernet 10/100, 1 GigaEthernet
- 4 IRIG 106 outputs (filtered, data + clock)
- Stand-alone or Master / Remote capability
- System accuracy $\pm 0.2\%$ over environments
- Factory calibration over operating temperature range
- System programming and real time quick look with IN-SNEC Monitor Control & Configuration software (MCC)
- 4 chassis configurations : 7, 8, 12, or 13 User slots

Main Benefits

- Both PCM & Ethernet streams
- User friendly MMI
- Analog and digital acquisition
- Video acquisition
- Data recording
- Large bandwidth acquisition meets the new needs
- Evolving system (at module and/or chassis level)

The UMA2000 is a state-of-the art programmable Data Acquisition System designed for both classical PCM and future Networkcentric telemetry systems.

With a LAN oriented design, the UMA2000 can be configured and monitored through standard Ethernet TCP/IP.

Two independent streams of acquired data are available via high speed Ethernet (UDP or TCP protocols), and as IRIG 106 PCM.

The UMA2000 offers an extended library of Analog and Digital Acquisition modules to satisfy a myriad of user needs.

The UMA2000 is a highly scalable system, with a large number of channels per module, and up to 12 chassis in an isosynchronous acquisition chain.

The UMA2000, in a cabin or rugged chassis, meets all airborne applications :

- commercial aircraft: airliners, commuters, business jets
- helicopters
- fighter aircraft, UAVs.

ZODIAC DATA SYSTEMS

AEROSAFETY & TECHNOLOGY
Telemetry & Telecommunications



Technical specifications

Chassis characteristics

CABIN CHASSIS			
Type of chassis		7 / 8 modules	12 / 13 modules
Part Numbers	Master	UMA07	UMA012
	Slave	UMA07-SLV	UMA012-SLV
Size (mm)		130x125x246	130x125x353
Weight (kg)		2.5	3.9
Power supply (W)		100	150

RUGGED CHASSIS			
Type of chassis		7 / 8 modules	12 / 13 modules
Part Numbers	Master	UMA07A	UMA012A
	Slave	UMA07A-SLV	UMA012A-SLV
Size (mm)		130x140x262	130x140x380
Weight (kg)		3.9	5.5
Power supply (W)		100	150

Chassis description

CPU module with Ethernet and PCM interfaces
 Time code : IRIG-B (options : 1pps, 10MHz)
 28 VDC power supply (18 - 45 VDC), per MIL STD 704F
 HUB Module for digital backplane distribution

Outputs description

- 3 Ethernet ports
 - 2 x 10/100 + 1 x 1000 Mbps
 - Monitoring & Control
 - Data transmission (UDP, TCP/IP)
- 2 independent IRIG106 PCM streams
- 2 Data + Clock Outputs
 - Codes NRZ (L,M,S) + clock, Bi-f (L,M,S), DM (M,S)
 - Word length up to 24 bits
 - Programmable bit rate up to 25 Mbps
 - RS422 outputs
- 2 filtered outputs Programmable output level from 0 V to 2 V
- Programmable filter Bessel 6th order, programmable frequency low pass
- Output impedance 50 Ohms

Environmental conditions

Temperature Storage	-55°C to +100°C	MIL STD 810F /AIR 7306
Operating Relative humidity	-40°C to +70°C 95% RH	MIL STD 810F MIL STD 810F
Altitude	60,000 ft	MIL STD 810F
Vibrations		
Swept sine*	10 g - 20-2000 Hz	MIL STD 810F
Random	20 g rms	MIL STD 810F /AIR
Shocks*	30 g 11 ms	MIL STD 810F
Acceleration	20 g - 3 axes	MIL STD 810F
* on rugged chassis		
EMI/EMC		
ESD	8 kV IEC	801-2
CE/CS/RE/RS	MIL STD461	/AIR 7306

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Module specifications

Analog acquisition module

24 / 40 analog channels, DC - 10 kHz bandwidth
 16 bit resolution, 0.2% typical accuracy analog to digital conversion, at high speed, fixed sampling rate
 Programmable sub sampling and digital filtering
 Programmable input range : ± 25 mV to +100 V, depending on LV/HV module selection (low or high voltage)

Analog signal conditioning configuration module

Built-in signal conditioning
 ICP, potentiometer
 Quarter, half or full bridges
 PT100, PT1000, thermocouple
 24 channels
 Programmable current source to 20 mA

Synchro or resolver acquisition module

4 analog channels
 26 V or 115 V / 400 Hz reference voltage
 ± 0.15 deg, typical accuracy

Video acquisition module

2 video + 2 voice channels
 On-board video and voice compression

ARINC429 acquisition module

16 acquisition channels
 Filtering individually programmable
 High or low speed

R3910 acquisition module

2 inputs 1 LS and 1 HS
 Programmable data filtering

DIGIBUS acquisition module

2 inputs 1 LP and 1 LD
 Programmable data filtering

S/PCM acquisition module

16 individually programmable RS422/485 channels, + 8 RS232 channels
 Data rate up to 600 kbauds
 PCM merger up to 4 Mb/s
 7/8 bits per character, 1/2 stop bits, even/odd/no parity

16 bits parallel digital acquisition mod.

7 address differential outputs

MIL-STD 1553 acquisition module

4 independent bus acquisition channels (bus monitor)
 Programmable data filtering

8x128 external multiplexed channels

Module dedicated to temperature or pressure scanner
 8 analog inputs x 128 addresses

High voltage and RMS 2 slots module

6 channel analog inputs
 Up to 200 VRMS (AC) or 200 V (DC)
 RMS computation on voltage and power

Discrete acquisition module

32 discrete channels (differential, up to 32 V)
 Programmable threshold (up to 20 V) with hysteresis
 3 different acquisition modules :
 Synchronous sampling (-S)
 Event tagging (-A)
 FCP (Frequency / Counter / Period) (-P)

Recording module

Storage of 1 PCM stream on easily removable low cost Compact Flash
 8 GB or more, COTS component

GPS module

RF and NMEA inputs for time reference
 IRIG B and 1 pps outputs

Applications

- ▶ Aircrafts
 - ▶▶ Mirage 2000, Mirage F1, RAFALE, A320, A380, selected for A350, LCA-TEJAS
- ▶ Helicopters
 - ▶▶ PUMA, NH90, Z15
- ▶ iNET program

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