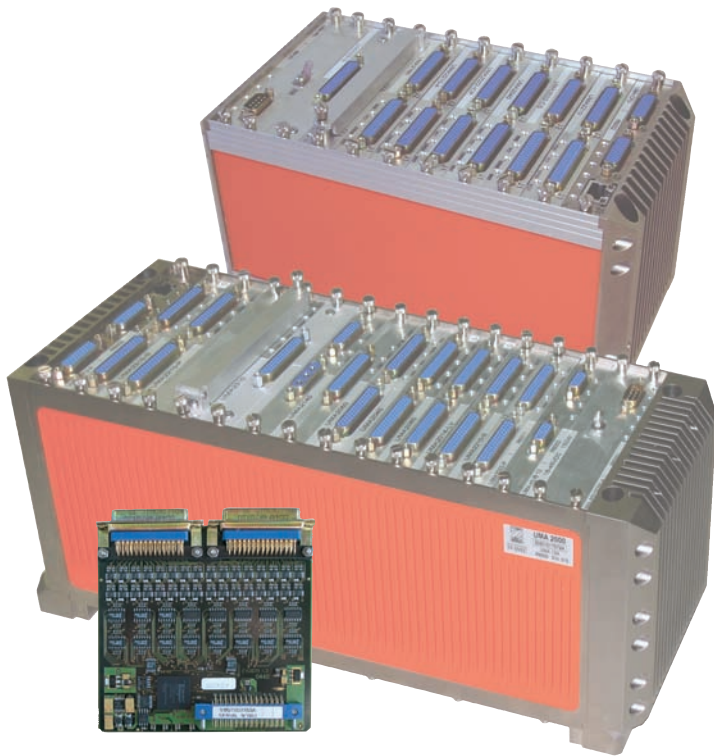


# UMA 2000 - Universal Multi-Acquisition system



## Your Network-based DAU



IN-SNEC®

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.

## 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)

**ZODIAC DATA SYSTEMS**

AEROSAFETY & TECHNOLOGY  
Telemetry & Telecommunications

**ZODIAC  
AEROSPACE** 

## Technical specifications

### Chassis characteristics

#### CABIN CHASSIS

Type of chassis	7 / 8 modules	12 / 13 modules
Part Numbers	Master Slave UMA07 UMA07-SLV	UMA012 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 Slave UMA07A UMA07A-SLV	UMA012A 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, program-  
mable frequency low pass

Output impedance 50 Ohms

### Environmental conditions

Temperature Storage	-55°C to +100°C	MIL STD 810F /AIR 7306
Operating	-40°C to +70°C	MIL STD 810F
Relative humidity	95% RH	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

# UMA 2000

## Universal Multi-Acquisition system

### 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 :  $\pm 25$  mV to  
 $\pm 100$  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  
 $\pm 0.15$  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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