

# ACQUISITION SYSTEMS

## FRONTDAQ: FD20



- 20 synchronized analog inputs
- Embedded exploitation software
- Web Server
- upto 7680 samples per second per channel
- Compact Flash
- Ethernet
- **Options:** GSM, GPS, Monitoring software

### Presentation:

Frontdaq is a new design philosophy for AOIP datalogging products.

The user can program, read data, start or stop acquisition from any computer using a simple internet explorer, without needing to install a specific software. All the necessary software are embedded into the datalogger.

Frontdaq is able to store data with a sampling rate up to 7680 samples/second/channel, whatever the number of channels is. All channels are synchronized.

Using a compact flash extension memory, data can be stored for months in addition to its embedded 256MB internal memory.

TTL inputs outputs can be used to automate the acquisition as trigger function.

### Functions:

**20 analog inputs** (universal) with scaling ( $ax+b$ ) and user units

- **Voltage:** Standard ( $\pm 10V$  on 11 ranges),  
Thermocouples (type K/T/J/N/E/R/S/B)  
Strain gauges. (1/4, 1/2, and full bridge)

- **Current:** 0-20 mA and 4-20 mA with external Shunt

- **Resistance:** temperature sensors (Pt100, 500, 1000 ohms) 2 or 4 wires,  
Resistance (35-2500 Ohms)

**4 analog outputs** (0-10V), **20 TTL inputs /outputs**

### Software and resources

\* **Software in web server mode** integrated into the logger for settings, controls, download of stored data. Data can be viewed and downloaded in real time, and simple spreadsheet software can be used to perform exploitation.

\* **Frontdaq Network Monitor** : to check the IP addresses of Frontdaq connected on the network.

\* Data are dated and stamped and a large number of exportation files types is available (ASCII, CSV, Excel XML..).

\* **Internal memory (SDRAM): up to 660.000 samples per channel**

\* Extension of embedded memory using CF cards

\* **Communication:** TCP/IP (RJ45 10/100), RS232, RS485, Compact flash (extensions GPS...), Wireless (WIFI)

\* **Power supply:** main or rechargeable battery.

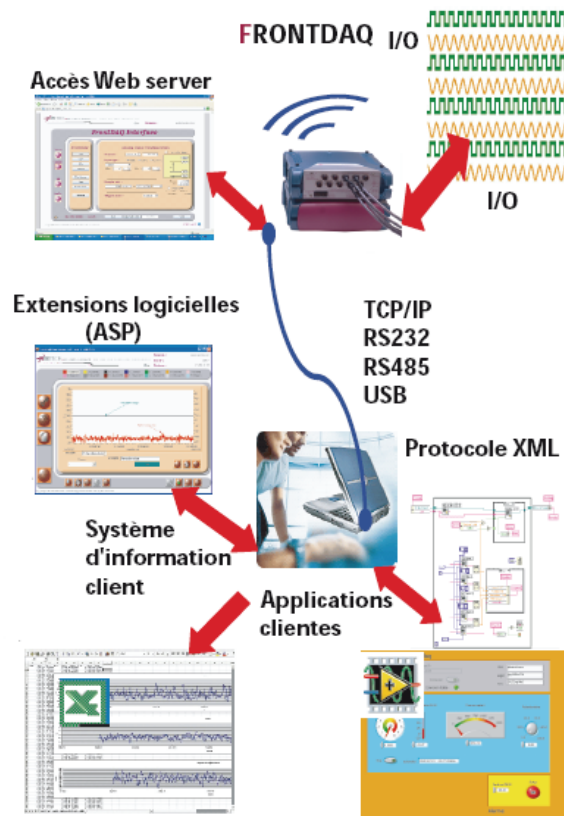
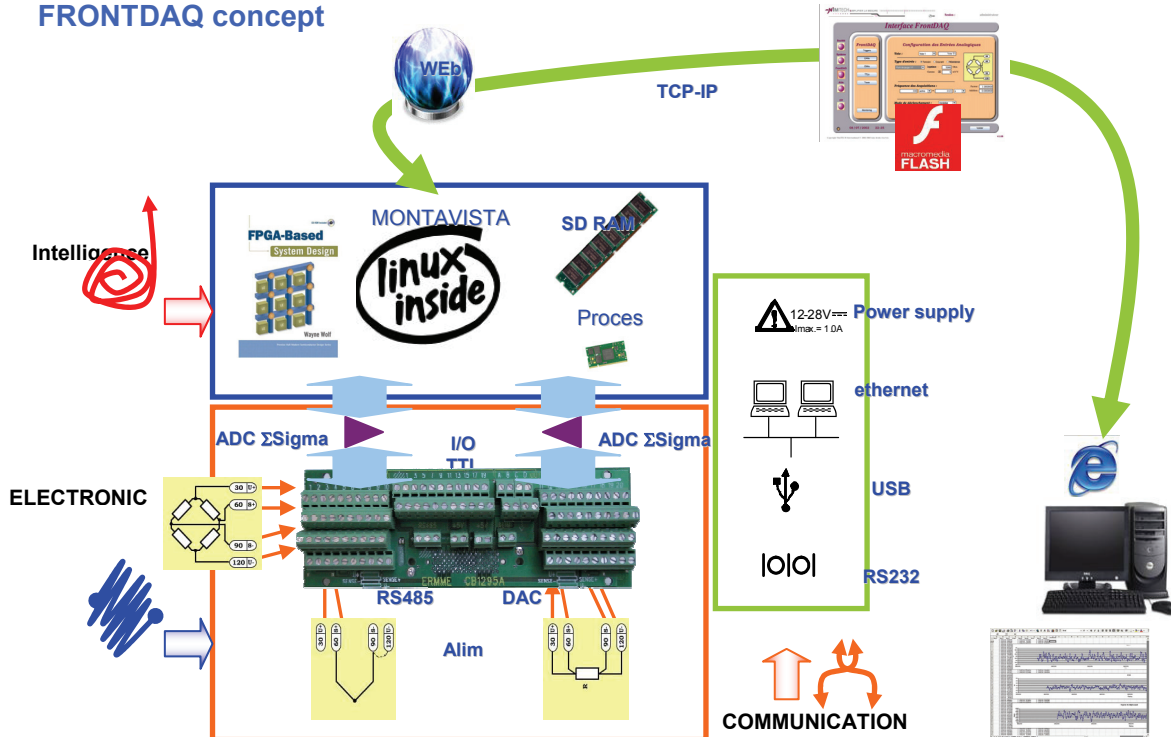
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## Specifications

INPUTS		20 Channels					
Dating		YYYY/MM/DD/HH/mn/ss:000000					
COMMON MODE		Between 10mV to 100 mV (between channels).					
SAMPLING RATE (One 24 Bits Digital Analog Converter per channel)		Upto 7680 S. per second and per channel. Channels are synchronous.					
ANALOG INPUTS (20)		RANGES		Accuracy   RESOLUTION (BASE < 150 S / SEC)		FULL SCALE	
					Accuracy	Resolution	
VOLTAGE		Range 1: from ± 15mV to ± 1 V in 7 ranges IMPEDANCE. 100 kOhms		±20 mV	±10 mV	1 µV	From ± 20mV to ± 1,25 V
		Range 2: from ± 1V to ± 10 V in 4 ranges. IMPEDANCE 14 kOhms		±10 V	±100 mV	1 µV	From ± 1,25V to ± 10V
THERMOCOUPLES							
K (Nickel chrome / Nickel aluminium)		-180°C to 1300°C			± 1,2°C	0,001°C	
T (Copper / nickel)		-250°Cto 400°C		± 1,1°C			
J (Iron – cuivre / nickel)		-180°C to 750°C		± 0,9°C			
N (Nickel - chrome Silicium / nickel silicium)		-270°C to 1300°C		± 1,7°C			
E (Nickel - chrome / Copper - nickel)		-40°C to 900°C		± 0,7°C			
Other thermocouples		R, S, B					
STRAIN GAUGES (1/1, 1/4, 1/2)		Refer to voltage		± 50 µStr. + 5 µStr. drift /°C.			
PT (100 / 500 / 1000)		PT100 (De -200 à 850 °C) - PT500 (850 °C ) PT1000 (400 °C)		PT100: ±0,01 °C - PT500: ±0,05 °C PT1000: ±0,03 C			
RESISTANCE		From 35 Ohms to 2400 Ohms in 7 ranges		±0,1 Ohm		From ±38,5 to ±2500 Ohms	
ANALOG OUTPUTS(4)		0-10v (16 bits)		0,5%			
TTL(I/O) (20)		"0" logic		"1" logic			
TTL inputs: Max voltage –0,5V/7v TTL outputs: courant max ± 20mA		0,8V 0,1V @50µA 0,36V@8mA		2V 4,4V @ 50µA 3,9V@ 8mA			
TRIGGERS: 5 triggers. Start:Stop par trigger simple retrig functions							
Counters		4 counters					
Clock		Accuracy: 3,85 <sup>-07</sup> (from 0°C to 50°C)					
Power Supply: 12-28 V (9-32V)				Power 6 Watts per hour without sensors			
CONDITIONS :		FUNCTIONNING-10°C à 50°C			STORAGE: -40°C à 80°C		
MEMORY							
INTERNAL (SDRAM) : FIFO or LIFO		256 Mo: 660.000 samples per channel.		EXTERNAL		COMPACT FLASH	
DIMENSIONS and WEIGHT		L211,5 x l194,7 x H57 mm - 800 grammes approx		MATERIAL: ABS			
DAC TYPE: Sigma-Delta RESOLUTION: 18 bits @150 S/sec up to 13 bits (7680 S/sec).		PROCESSOR INTEL PXA 255 - 400 MHz		OPERATING SYSTEM Embedded Linux		SERVER WEB Apache	
COMMUNICATION		TCP/IP / WiFi (802.11g) RS232, RS485 Integrated CF card reader					
FIR and bandwidth: bandwidth for 7680 S/sec: Bp-3db= 2,2 KHz Digital filter: Sin3 cardinal + FIR 22 steps :if frequency (f)<1365 Hz :Bp= (f)*0,039/ if (f)>1365 Hz:Bp=(f)*0,265 Analog Filter: Frequency<150S/s							

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## FRONTDAQ concept



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## SOFTWARE

**STANDARD software) FrontSOFT** –Web server access – Access through internet explorer –No need of DLL or driver

- SetUp, monitoring,

Data import export: ASCII, CSV, Excel, XML... –

Running under Windows, Linux, MacOS.

**FrontDAQ Network Monitoring (FNM)** – IP adress management

**XML Protocole** (commands for customer applications (Labview, C++...)).

## OPTIONS

**VISULOG:** Real time monitoring software

## Accessories

### ACCESSORIES

- External rechargeable battery (10h00 - Nimh).
- PT100 for CJC).

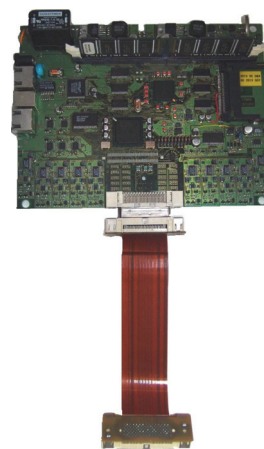
## OTHER FRONTDAQ Models

*FRONTDAQ 10 ISOLATED CHANNELS:*



*Model FD 10ISO with its battery option*

*FRONTDAQ: 20 channels extreme temperature confitions*



*Allow to store data in harsh conditions: from -40°C to +80°C:*



**AOIP**

**BP 182  
91133 Ris Orangis CEDEX  
FRANCE  
+33 169 028 900  
www.aoip.com**



The above mentioned characteristics are subject to change without prior notice

SOFIMAE laboratory on our premises of Ris-Orangis  
\*Ranges available on [www.cofrac.fr](http://www.cofrac.fr)