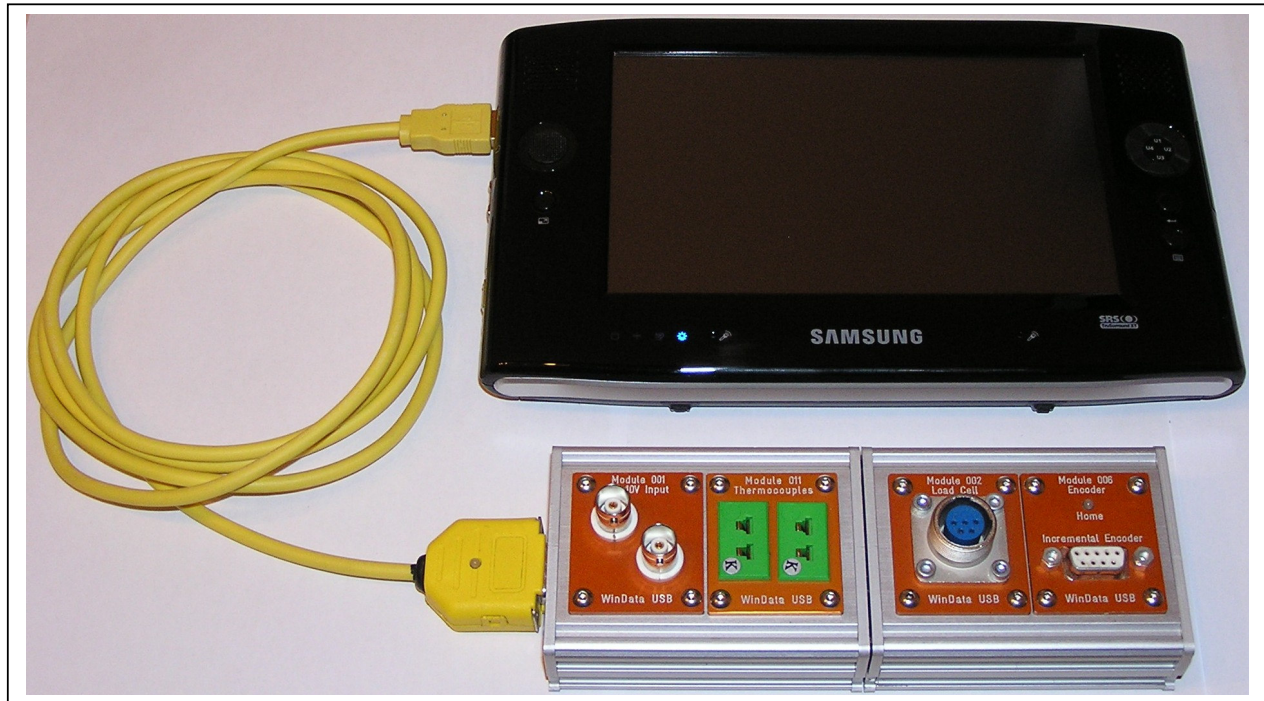# WinData USB System


WinData USB system is composed by several acquisition units connected in sequence, each unit supports specific modules for connections to many transucer typology, the units chain is connected at an USB port of a PC using a small adapter. USB connection also supply the power for all components.

On a normal PC is possible to connect a maximum of 4 adapter, each adapter can supports a maximum of 4 acquisition units and each unit can mount 2 specialized modules, so a maximum of 32 conditioning modules can be connected to a PC.

The modules, that should be choosed in base of the typology of the signals to be acquired, can be for: voltages +/- 10V (already conditioned signals), strain gages (load cells, torsiometers, pressure transducers etc.), potentiometers, incremental encoders, phonic wheels, photocells, thermocouples 'K', high voltages and currents, accelerometers, etc.

- Small, light, easy transportable
- No A/D conversion card required
- Works with every kind of PC (Windows XP o Vista)
- Does't need any power supply
- Permanent memorization of configurations and calibrations

The Adapter
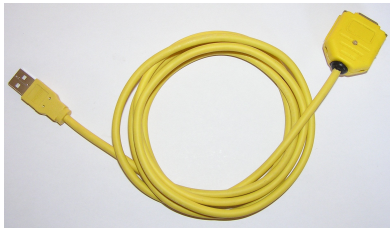
Connects acquisition units to any kind of PC (desktop, notebook, tablet PC, ecc.)

|	
Bus:	USB 2.0 (compatible with 1.1)
Power supply:	5V from USB port
Supported Units:	chain of maximum 4
Cable lenght:	160 cm

The Acquisition Unit

Supports modules specialized for signals typology, converts analog signals in digital form, memorie configurations and calibrations

Bus:	porprietary, high speed digital
Power supplìy:	5V from bus
CPU:	50 MIPS microcontroller
A/D Converter:	16 bit, differential
Memory:	flash, 10 anni minimum retain

The Conditioning Modules
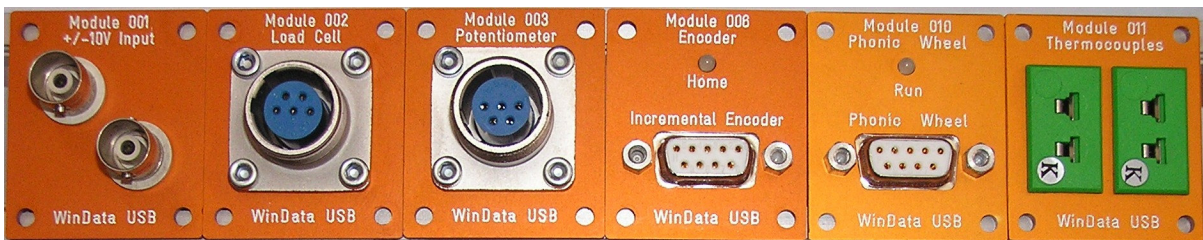
Supply and conditioning of transucers, analog or digital, example of typologies:

Module 001

Transucer:	Voltage signal +/- 10V
Impedance:	47 KOhm
Precision:	+/- 1mV

Module 002

Transucer:	strain gage
Impedance:	10 MOhm
Supply:	4.096 V=

Module 003

Transucer:	potenziometrico
Pot. Impedance:	1 – 50 KOhm
Supply:	4.096V

Module 006

Transucer:	Inc. encoder inc. 2 Ph.
Maximum Freq.:	10 MHz
Supply:	5V (opt. 12V)

Module 010

Transucer:	phonic wheel / photocells
Resolution:	2 microseconds
Supply:	5V (opz. 12V)

Module 011

Transucer:	thermocouples 'K'
Temperature:	0 – 400 °C
Resolution:	0.01 °C

The Visualizer
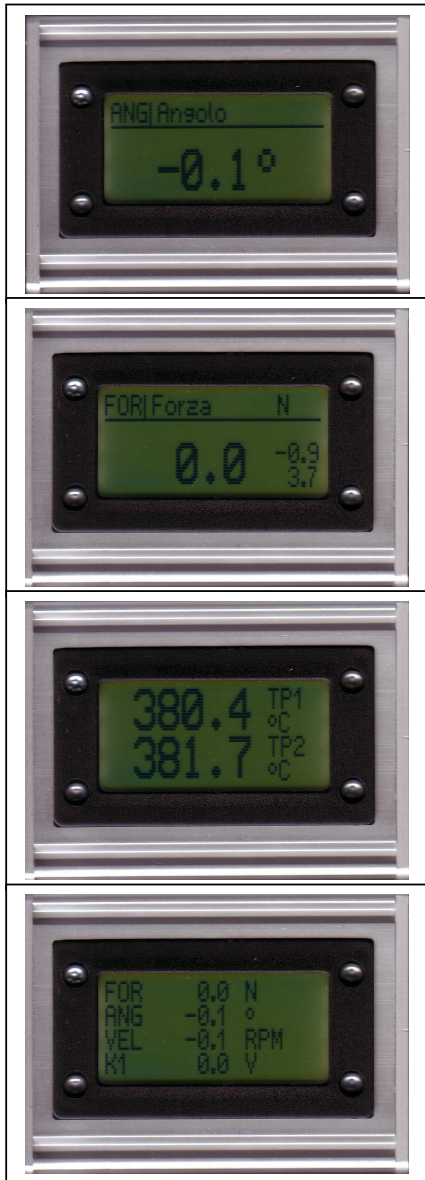
Optionally used intead adapter, can show istantaneous values, works also without a PC

Bus:	USB 2.0 (compatible con 1.1)
Power supply:	Internal Lithium battery, 1000 mAH
Battery charge:	from USB port (PC or 12/24V= adapter or 80/220V 50-60Hz adapter)
Supported Units:	chain of maximum 4
Operative modes:	1 channel, 1 channel with min. e max peaks, 2 channels, 4 channels
Display:	Graphic LCD 100 x 32 pixels green leds backlight
Configuration:	from PC, with permanent save on flash memory

Example of application with visualizer and acquisition unit configured with a load cell module and an incremental encoder module, the transucers are supplied and their values are shown on the display (battery can supply for about two hours, without a PC)


The tablet PC

Ideal for use on vehicle, can be optionally provided with a dashboard support and a ligher power supply

|	
CPU:	Intel 900 MHz
RAM:	512 MB
Hard disk:	60 MB
Operative system:	Windows XP Tablet Edition
Connections:	Bluetooth, WiFi, 2 x USB 2.0 etc.

The Software

WinData software are designed to satisfy the three classic problems of the acquisitions employed: the signal sampling, the acquired data analisys and the production of paper or paperless report documentation.
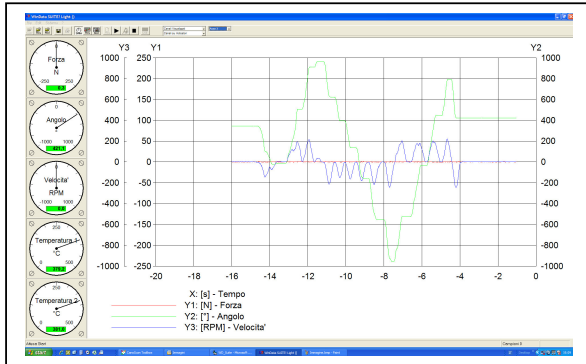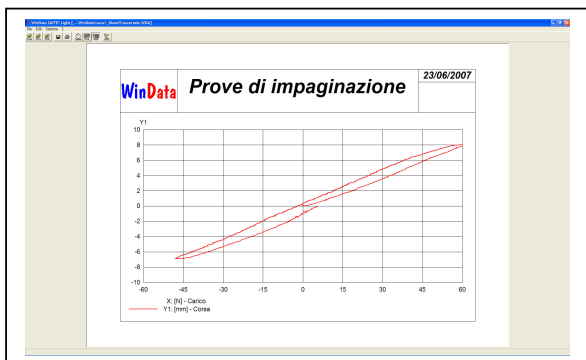

Sampler funcion characteristics:

Supported Hw: National Instruments, WinData USB
Channel number: limited only by hardware
Sampling speed.:   N.I. 200KHz, WinData USB 1KHz
Maximum lenght: limited only by PC hard-disk
Start trigger: manual or signal threshold
Max. pretrigger: unlimited
End trigger: manual or signal threshold
Max. posttrigger: unlimited
Visualization: gauges and/or graohic yt o xy
Possibility of field transucers calibration
Possibility of real time signal filtering
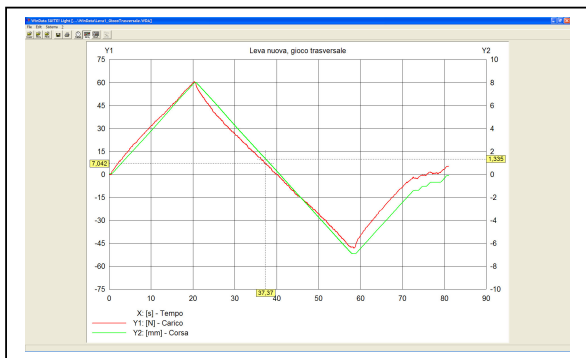
Editor function characteristic:

Max. channels: unlimited
Max. samples: unlimited
Input data format: WinData and ASCII
Output data format: WinData and ASCII (Excel)
Visualizations: yt, e xy
Max. Y axis: 8
Filter computing: LB, HP, BP, BE (20-160 dB/dec)
FFT computing: Re, Im, Mod, Power Spectrum
Channel computing: +-*/, exp, sin, mod, der, int
Possibility of channel remove
Possibility of head and tail cuts
Possibility of results extrapolation from curves

Reporting function characteristics:

Max. graphs on sheet: unlimited
Max. dynamic labels: unlimited
Max. images (jpeg, wmf, bmp):   unlimited
Sheet dimension: A4, A3
Sheet orientation: Vert. Orizz.

Automatic translation system for multilanguages report