



Innovator In Spectroscopy Equipment

DMCA2010



DIGITAL MULTI CHANNEL ANALYSER USB BASE MODEL DMCA2010

www.cfp.co.ir



CATALOG



SPECTROMETER



FREE DOWNLOAD

DIGITAL MULTI CHANNEL ANALYSER USB BASE

MODEL DMCA2010

Features

- Easily Pluggable onto PMT
- Low power consumption
- Suited for embedded systems
- Various supported PMT pinouts
- 12-bit resolution to control PMT high voltage (0-1500V)
- Measurement of different pulse features
- Excellent pulse fidelity for a wide range of signal currents
- Suitable for most types of scintillation detectors, including NaI(Tl), LaBr₃(Ce), etc.
- Light Weight 152gr (0.33lb)
- Ready for field operation
- Powered and controlled by USB
- Active divider for highest linearity (Optional)
- Excellent electrical shielding and robustness
- Special rugged design to withstand typical field usage
- Fully dust protected
- Continuous operation under severe environmental conditions
- Convenient, single-cable connection for most applications
- Data transfer over USB, RS-232, and Ethernet

Precise and Stable Measurements with High Data Fidelity and Low Power Consumption



Description

The digital multichannel analyzer (DMCA) is the heart of most experimental measurements. It performs the essential functions of collecting the data, providing a visual monitor, and producing output, either in the form of final results or data for later analysis.

The sealed DMCA2010 is a PMT plug-in with a digital MCA, embedded high-voltage generator and the active voltage divider. It plugs directly onto the PMT and can be powered and controlled via USB. The high voltage divider can deliver 100 μ A DC current and 20 mA pulse current to the PMT anode while maintaining excellent gain stability.

The device comes with USB port in the standard version while the port can be changed to Lemo 6 Pin, RS232 and LAN in the optional version.

Specifications

Input(s)

USB port

DC +5V USB (200mA) type mini B

LAN port (optional)

Power over Ethernet (PoE)

RS-232 port (optional)

Power over RS-232

LEMO 6 Pin (optional)

Power over LEMO 6-pin

PMT

14-pin socket for DCMCA2010 base. Multiple PMT pinouts and custom pinouts are available.

Output(s)

Output high voltage on PMT(HV PIN)

Control(s)

USB port

Setting configure via USB cable

LAN port (optional)

Setting configure via LAN cable

RS-232 port (optional)

Setting configure via RS-232 cable

LEMO 6-pin (optional)

Setting configure via LEMO 6-pin cable

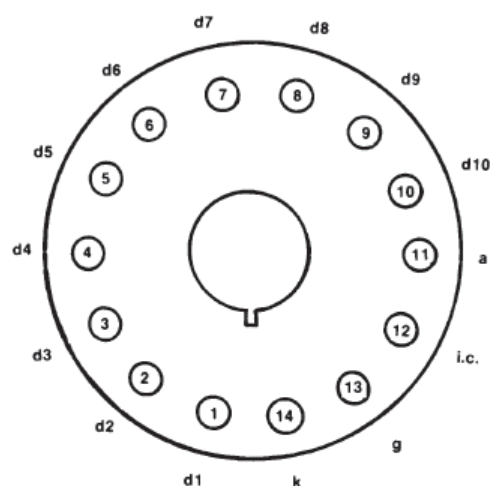
Indicator(s)

No indicator

Performance

PMT

10-stage PMTs that fit standard 14-pin sockets (below Fig)



d1 – d10	dynodes 1 to 10
a	anode
i.c.	internal connection
g	grid
k	cathode

MCA
USB-powered and controlled
Digital-signal processing MCA
Using waveform digitizing ADCs
10-bit/20MSPS (power saver) to 12-bit/80MSPS (high performance)
One unit is suitable for all scintillators by varying programmable parameters
4096 \times 32-bit histogram memory
Ultra-fast histogramming rate, up to 1Mcps (periodic)
Data Acquisition and Analysis
OS
Built in Windows 7 or higher versions
Software
DMCA2010 (SOFTWARE)
Measurement/Spectrum
High Voltage
0 -1500 V
positive or negative
programmable in 1V steps
Transistorized divider for highest linearity at lowest power consumption (OPT)
ROI Selection
4 ROIs to select on store
Spectrum Type
cumulative spectrums
ADC
Channels
12bit in 4096CH @80Mhz FRQ
Digital Signal Processing

12-bit and 80MHz ADC

Charge sensitive preamplifier gain: 10 – 150mV/pC (selectable)

Amplifier coarse gain: (x1 to 150x) in 15 step

Amplifier fine gain: (0 - 2x) in 65536 step

Integration time filter for the energy calculation with software adjustable rise time in the range 0 to 0.819ms @80MHz in 0-65536 step

Trigger threshold software adjustment (0 to 100% scale) in 1024 step

Software fine tuning of the Pole-Zero cancellation

Software gain stabilization

Pile-up rejection and Live Time correction

Baseline restorer with programmable averaging

Optional Extended Functionality

Trace acquisition for oscilloscope-like display, 1024 samples

Real-time pulse shape discrimination (optional)

Stores energy, time-of-arrival and pulse shape analysis parameters on event-by-event basis in list mode data acquisition (optional)

Applications

- Workhorse instruments in many scientific measurements.
- Digital all-in-a-PMT-Base MCAs with Bias Supply and Digital Signal Processors to use with Scintillation Radiation Detectors as a DMCA
- Identify radioactive materials
- Natural radiation measurement
- Building block in different high and low resolution Gamma spectroscopy systems
- Laboratory measurements for spectroscopy systems
- Detection of radioactive materials in the environment and Laboratory
- Health Physics



Electrical, Mechanical and Environmental

Power required

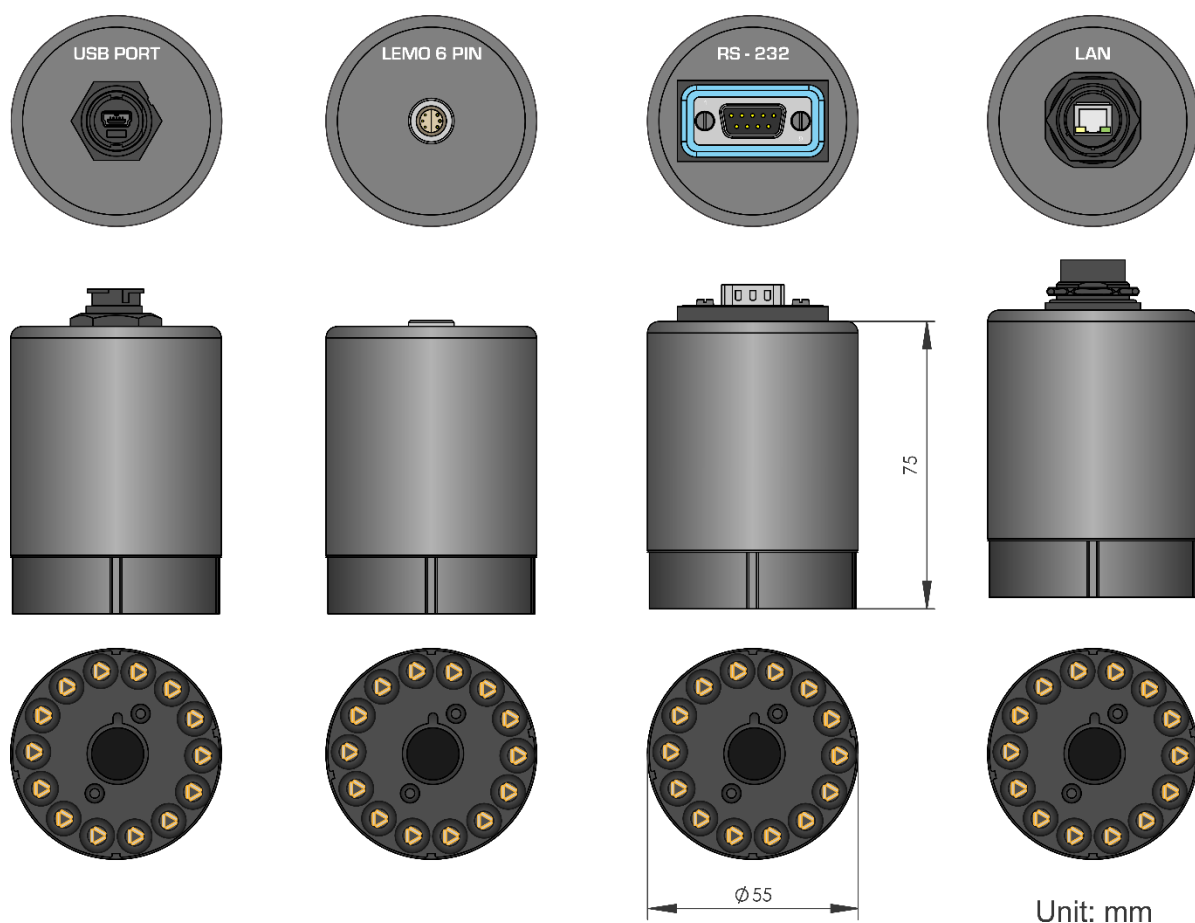
5V (150 mA) DC USB port

Power consumption

200mA to 400mA at 1000V depending on ADC and speed

Physical

Dimensions	package style: 55 x 75 mm (Ø x H)
Weight	152gr
Storage temperature	-20°C to 60°C
Operating temperature	-15°C to +50°C
Relative Humidity	10 to 80%



DMCA2010-Mechanical

Software and user interface

PC software

DMCA2010 (SOFTWARE)

DMCA2010 software is a total solution for various measurement recording applications. The software consists of three main tabs including "Device", "Settings" and "ROI Info". The user can simultaneously monitor the spectrum and raw input signal.

Using different tabs, the user can retrieve and set different parameters, define several regions of interest (ROIs) in the spectrum and monitor various measurements in the ROIs in a real-time manner.

The software also comes with an interesting policy for recording continuous measurements with a predefined number time length. The software also provide various saving formats which can be used accordingly.

Input /Output (Using supplied CFP-Pro/DAQ Analysis software)

USB

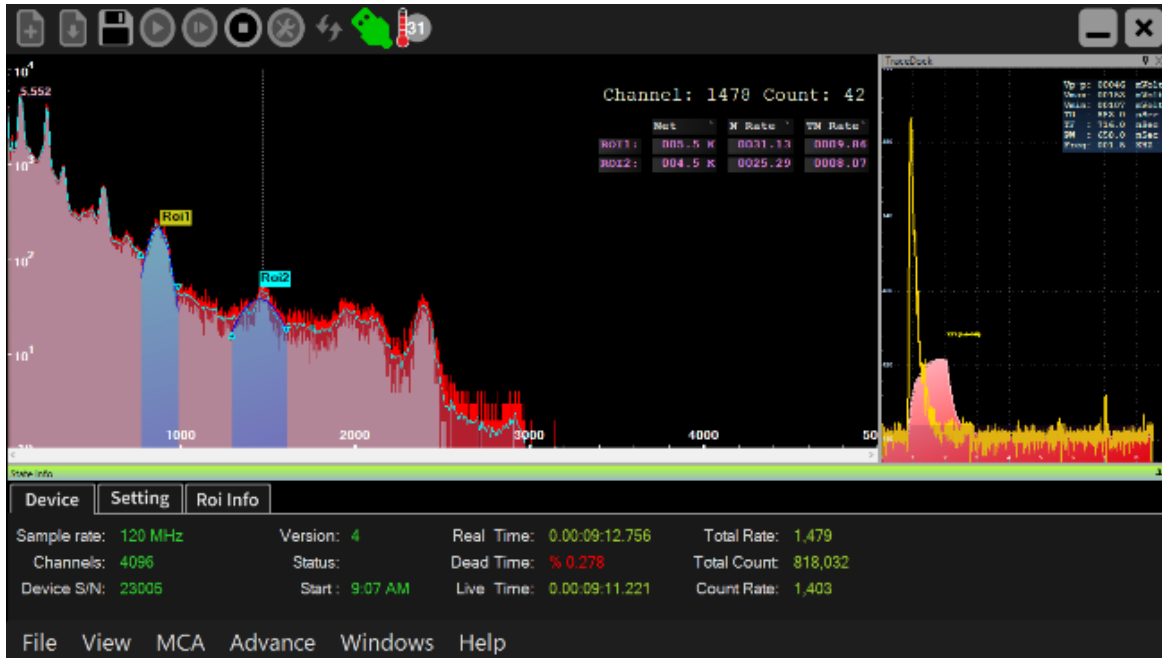
LEMO 6- pin (OPT)

RS-232 (OPT)

LAN (OPT)

Data Output formats

CSV, TXT, MCA, KML, XLS, LOG



Software main window


Ordering info

Standard package includes

Part #	Image	Description
DMCA2010 main USB		Digital multi-channel analyzer USB base Includes the main body of device (HV, MCA ...)
ACCE2010001		CD user guide (1 Pack)
ACCE2010002		Box with foam inserted (1 Pack)
ACCE2010003*		Guaranty (one-year)
ACCE2010011		2m cable USB-A to mini USB-B (1 pack)

* = We fully support our products. We guarantee your satisfaction in the quality of our instruments by providing a complete one-year warranty covering any defect of workmanship, material, and/or design. If our products do not perform, we will provide complete repair and/or replacement. for guaranty conditions, please refer to manual device (DMCA2010- Manual).

Optional accessories and services

Part #	Image	Description
DMCA2010 main RS-232		DMCA RS-232 connector

DMCA2010 main LAN		DMCA LAN connector
DMCA2010 main LEMO		DMCA LEMO connector
ACCE2010004		Installation
ACCE2010005		Training
ACCE2010006**		Re-Calibration (Interval) services. 1year factory maintenance suggested, not required.
ACCE2010007		Hard case with foam insert
ACCE2010012		2m cable USB 2.0 (A) to mini USB (B) cable IP68 (1 pack)
ACCE2010013		USB to USB extenuation Cable 10,15, 20, 30 meters

ACCE2010014		Rs-232 cable
ACCE2010015		LAN cable
ACCE2010016		LEMO cable to USB for PC connection

** = The proper maintenance & calibration of your instruments is critical to ensure proper performance & accuracy. for Re-calibration (Interval) services, please call with CFP company (021- 46045383)





Innovator in Spectroscopy Equipment



Unit 10, No 64, Vahedi
(7) St, After Punak Sq,
Ashrafi Esfahani Expy,
Tehran, Iran



+98 (21) 46045383

w w w . c f p . c o . i r