

DT5810

Fast Digital Detector Emulator



The emulation of your system is now faster than ever!

Features

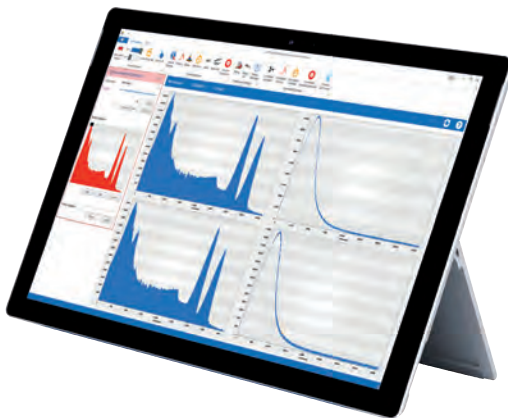
- 1 ns Rise Time
- Pulsar/Emulator/Function Generator operating modes
- Energy spectrum emulation
- Time distribution emulation
- Custom signal shape emulation
- Pile-up emulation
- Noise and periodic interference emulation
- Baseline drift
- 1 ns/step programmable delay generator
- Correlated signals generation on the two output channels
- Two shape on the same channel for testing the pulse shape discrimination
- Continuous and pulsed reset pre-amplifier emulation
- Analog input for recording signals from real detectors

The DT5810 is the model of the Detector Emulator family with the fastest signal output. Thanks to an updated and faster DAC it is now possible to emulate the behavior of the fast detectors on the market with 1 ns rise time. The Digital Detector Emulator is the only synthesizer of random pulses that is also an emulator of radiation detector signals with the possibility to configure energy and time distribution.

The stream of emulated signals becomes a statistical sequence of pulses, reflecting the programmed input features. When the emulation process is reset, the kernels of generators can be either re-initialized with new random data making the sequence always different, or they can be stored to reproduce the same sequence many times. The Digital Detector Emulator is able to emulate two different radiation sources at a time on the two output channels and to provide them either with fully independent parameters (energy spectra, signal shapes, temporal distributions of the events, noise characteristics, etc.) or with some of them correlated. For example the events can be time-correlated (steps of 1 ns), or a subset of events can share the same energy spectrum. It is also possible to set the channels in a master/slave configuration, where the first channel works as a trigger for the second one.

The output amplitude is selectable at ± 2 V with 50 Ohm or ± 10 V at high impedance. The unit can operate in the same three modes as the 5800 Family (Pulsar Mode, Emulation Mode and Waveform Generator Mode). The Waveform Generator supports not only standard waveforms: e.g. sinusoidal, squared, ramp shape, etc. but also arbitrary waveforms customized by the user.

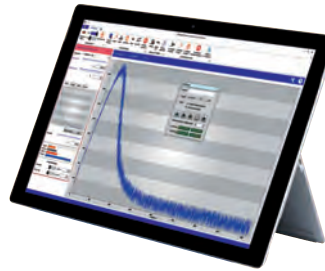
The DT5810 is equipped with an analog channel input through which it is possible to add to a signal coming from a real measurement setup the signal generated by the emulator: this way it is possible to emulate a source not actually present or hardly available. Moreover, the analog input allows to characterize a detector, acquiring shape and spectrum of its output signal.



Screenshot of the pulse generation in the graphical user interface provided with the Digital Detector Emulators.

Display and Software

Detector Emulator Control Center



The DT5810 is managed by a completely redesigned software interface that allows to manage the communication and to set the parameters for the signal generation for each channel.

Two independent displays allows the user to monitor the current status of each channel in the DT5810 device.



A simple emulation and evaluation setup: CAEN DT5810 and DT5770 single input digital MCA.



All CAEN Control Software are available for **free download** on the web site.

Ordering Option

Code	Description
WDT5810DXAAA	DT5810D - Dual Channel Desktop Digital Detector Emulator with channel correlation



News from Catalog web page
www.caen.it/news



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Great differences**



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