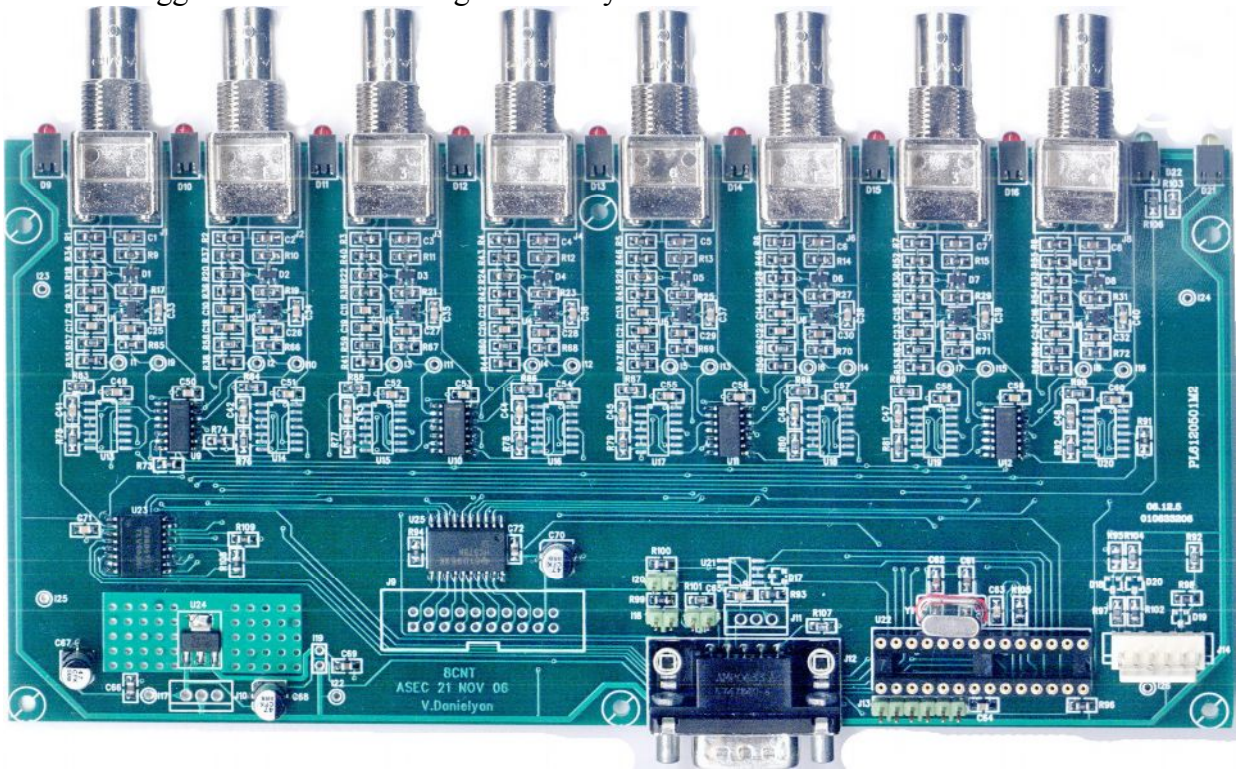
Aragats Space Environmental Center
Cosmic Ray Division, Alikhanyan Physics Institute, Armenia
http://crdlx5.yerphi.am

8-channel Programmable Threshold Comparator and Counter

The 8-channel Programmable Threshold Comparator and Counter (8CNT module) is designed for usage in particle detector setups as a fast digitizing stage (after the buffer preamplifier) in large multimodule setups, or as a standalone simple 8-channel counter.
For the thresholds programming and the output data readout it can communicate to the host PC (local network) optionally or by the on-board RS-485 interface, or through the MultiIFC module by any of RS-232, RS-485, USB, Ethernet.
The module counter and interface logic is based on the Atmel AVR Atmega48 8-bit microcontroller.
Different trigger conditions can be generated by software.



The main features are:

- 8 programmable threshold analog comparator inputs with logic level outputs,
- 8 selectable level (positive or negative) digital outputs for external counters,
- Time delay, depending on the input pulse amplitude in range 30-50ns,
- Threshold programming range 4mV-1000mV with 4mV step,
- RS-485 interface with DSUB connector,
- Internal +3.3V regulator,
- Power supply voltage – unregulated 5V – 10V,
- Supply Current <= 200mA,
- Maximal counting frequency – 10kHz,
- LEDs to indicate the input pulses presence for each channel, module power and programmable trigger condition,
- 8 input BNC connectors,
- 20-pin connector for digital outputs,
- 6-pin connector to the MultiIFC board