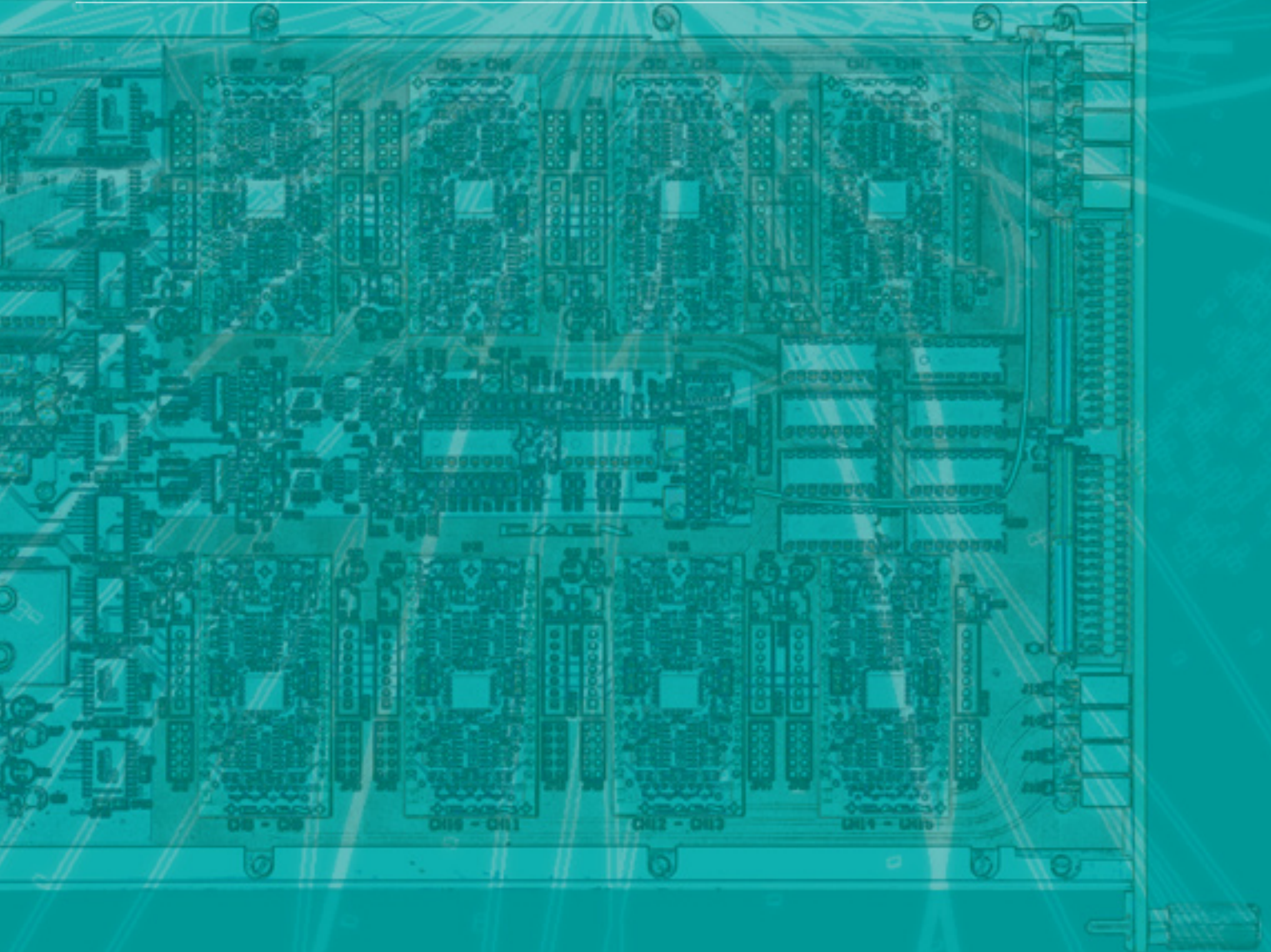


CAMAC Products

CAEN *Short Form Catalog 2010*

The Computer Automated Measurement And Control (CAMAC) is a standard bus for Data acquisition and control still present in a lot of nuclear and particle physics experiments and industry labs. CAEN is offering some CAMAC basic functions modules.

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C111C Ethernet CAMAC Crate Controller

T17

The Mod. C111C is a complete CAMAC controller, housed in a double width CAMAC module, that allows advanced interaction by means of standard Ethernet services, such as a local web server and TCP socket based communication protocol. The internal processor runs a version of Linux optimized for low memory footprint. A CAMAC bus control subsection handles all bus access operations and interactions, including LAM detection; a separate NIM subsection manages I/O signals located on the front panel: four outputs, four inputs, event counters and two "COMBO I/O" (trigger/busy) modules. The dynamic local web server, perfectly suitable for crate setup and maintenance, allows advanced monitoring and control without the requirement of dedicated software installation, meanwhile, an embedded script interpreter allows the local execution of C-like code, with full control on CAMAC and NIM functions. Front panel indicators include X and Q signals on last access, four user LEDs (controllable from script) and fault, connection status and NIM default indicators.

- Full CAMAC bus control with LAM detection
- Full control via embedded dynamic web server
- Available NIM I/O functions: outputs, inputs, event counters, pulse generators and trigger/busy modules
- Default I/O settings recallable with a dedicated pushbutton
- ANSI C remote control library, with extensions for local resources control
- Monitoring of crate voltages
- Embedded script interpreter for C-like code local execution, with CAMAC/NIM functions
- Stored script can be automatically launched at power-up (e.g. for crate initialization)
- X and Q signals on last access, user LEDs fault, status and NIM default indicators



Ordering Information

Code	Description
WC111CXAAAAA	C111C - Ethernet CAMAC Crate Controller

C808 16 Channel Constant Fraction Discriminator

T18

The Mod. C808 is a 16 Channel Constant Fraction Discriminator housed in a single width CAMAC module. The module accepts 16 negative inputs and produces 16 differential ECL outputs with a fan-out of two on two front panel header connectors. Each channel can be turned on or off via CAMAC by using a mask register (Pattern of Inhibit). The constant fraction delay is defined by a delay line network of 20 ns with 5 taps. The pulse forming stage of the discriminator produces an output pulse whose width is adjustable in a range from 15 ns to 250 ns. Moreover it is possible to program a dead time interval during which the discriminator is inhibited from retriggering, in order to protect against multiple pulsing. The maximum time walk is ± 400 ps (for input signals in the range from -50 mV to -5 V with 25 ns rise time). The constant fraction is 20%. The individual discriminating thresholds are settable in a range from -1 mV to -255 mV (-1 mV step), via CAMAC through an 8-bit DAC. The module can operate also with small (below 10 mV) input signals, though in this case the Constant Fraction operation is not performed, i.e. the time walk is higher. VETO and TEST inputs are available on the back panel. A Current Sum output generates a current proportional to the input multiplicity, i.e. to the number of channels over threshold, at a rate of -1.0 mA $\pm 20\%$ per hit. A "MAJORITY" output on a back panel connector provides a NIM signal if the number of input channels over threshold exceeds the MAJORITY programmed value. Several C808 boards can be connected in a daisy chain via the Current Sum output: in this case, by switching the Majority logic to "External", it's possible to obtain a Majority signal when the number of over threshold channels in the daisy chained modules exceeds a global Majority level. An "OR" output signal on a front panel connector provides a global OR of the outputs.

- ECL outputs with fan-out of two
- Threshold programmable individually for each channel
- Programmable output width
- Programmable dead time
- TEST and VETO inputs
- OR, CURRENT SUM and MAJORITY outputs



Ordering Information

Code	Description
WC808XAAAAA	C808 - 16 Channel Constant Fraction Discriminator (Delay 20 ns; F = 20%)

C894 16 Channel Leading Edge Discriminator

T18

The Mod. C894 is a 16 Channel Leading Edge Discriminator housed in a single width CAMAC module. The module accepts 16 negative inputs (positive on request) and produces 16 differential ECL outputs with a fan-out of two on two front panel header connectors. The pulse forming stage of the discriminator produces an output pulse whose width is adjustable in a range from 5 ns to 40 ns. Each channel can work both in Updating and Non-Updating mode according to on-board jumpers position. The discriminator thresholds are individually settable in a range from -1 mV to -255 mV (1 mV step), via CAMAC through an 8-bit DAC. The minimum detectable signal is -5 mV. VETO and TEST inputs are available on the back panel. A Current Sum output generates a current proportional to the input multiplicity, i. e. to the number of channels over threshold, at a rate of -1.0 mA per hit $\pm 20\%$. A "MAJORITY" output on a back panel connector provides a NIM signal if the number of input channels over threshold exceeds the MAJORITY programmed value. Several C894 boards can be connected in a daisy chain via the Current Sum output: in this case, by switching the Majority logic to "External", it's possible to obtain a Majority signal when the number of over threshold channels in the daisy chained modules exceeds a global Majority level. An "OR" output on a front panel connector provides a global OR of the output channels.

- ECL outputs with fan-out of two
- Selectable Updating/Non Updating mode
- Threshold programmable individually for each channel
- Programmable output width
- TEST and VETO inputs
- OR, CURRENT SUM and MAJORITY outputs



Ordering Information

Code	Description
WC894XAAAAA	C894 - 16 Channel Leading Edge Discriminator 50 Ohm Negative

C219 16 Channel Programmable I/O Register

T21

The Mod. C219 is a single width CAMAC module housing 16 channels, which can be set independently, via CAMAC functions, as Input or Output channels. An internal 16 bit mask register can be programmed via CAMAC to enable or disable each channel. Each channel is equipped with a 4-bit status register, which can be written in order to determine the operating mode. Inputs and Outputs can be enabled via CAMAC (Transparent Mode) or by an external Strobe signal (Externally Strobed Mode). Each channel can also work in Glitched Mode; in this operating mode a positive or negative transition of an input signal can be memorized in the Input Register. The module features also a programmable LAM signal generator.

- 16 independent channels programmable as inputs/outputs
- Inputs: Internally / Externally Strobed or Glitched
- Outputs: Transparent or Externally Strobed
- Programmable LAM generator



Ordering Information

Code	Description
WC219XAAAAA	C219 - 16 Channel Universal Programmable I/O Register

C1205 16 Channel QDC**T23**

The Mod. C1205 is a 16-Channel Charge Integrating ADC single width CAMAC module provided with 16 independent input channels. The C1205 combines a triple range (the total dynamic range is greater than 17 bits, in three overlapping 12 bit ranges) gated integrator charge to voltage converter, 3 Wilkinson type analog to time converters and a sub nanosecond time digitizer. The result is a high performance, wide dynamic range QDC with low dead time (5.5 μ s). A clear input and a busy output are also provided. The GATE, clear and busy signals are all NIM levels, with 50 Ohm LEMO style connectors. The 16 inputs are also 50 Ohm LEMO style connectors. The sensitivity at the input connector ranges from 25 fC per count on the low (most sensitive) range, to 1.5 pC per count on the high range. Full scale (on the high range) is greater than 6 nC. This C1205 has been designed for short conversion time and maximum data throughput, as required in state-of-the-art physics experiments. The built-in data processing can include sliding scale, pedestal subtraction and threshold suppression to reduce data volume and readout time. The module contains a multiple event buffer that can store up to 51 events. Using FASTCAMAC, this buffer can be read out at up to 30 MByte/s.

- **Three simultaneous ranges:** 80 pC, 650 pC and 6 nC
- **12 bit resolution**
- **Total dynamic range larger than 17-bit**
- **Integral non linearity:** ± 20 counts on low range, ± 5 counts on high & mid range
- **Noise smaller than ± 3 counts on low range, smaller than ± 1.5 counts on high & mid range**
- **Conversion time:** 6.5 μ s
- **Gate width from 10 to 500 ns**



Ordering Information

Code	Description
WC1205XAAAAA	C1205 - 16 Channel Charge Integrating ADC

C257 16 Channel Scaler**T24**

The Mod. C257 is a single width CAMAC module housing 16 independent 24 bit counting channels at a maximum input frequency of 100 MHz. The LAM is asserted by the 16th or 24th bit (programmable by internal jumpers) of each enabled channel. The status of the internal jumpers can be read via std. CAMAC functions. Each channel can be cascaded with the next one through internal jumpers. The unit exists in three different versions accepting respectively ECL (C257E), NIM (C257N) or TTL (C257T) inputs.

- **16 independent 24-bit channels**
- **Cascadeable channels in order to obtain up to 24x16 bit counting depth**
- **100 MHz counting frequency**
- **Three available versions:** ECL, NIM or TTL inputs
- **LAM generation when the counter is full**
- **Fast Clear, Inhibit and Test NIM inputs**



Ordering Information

Code	Description
WC257ECLAAAA	C257E - 16 Channel Scaler (ECL inputs)
WC257NIMAAAA	C257N - 16 Channel Scaler (NIM inputs)
WC257TTLAAAA	C257T - 16 Channel Scaler (TTL inputs)