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Nuclear Physics

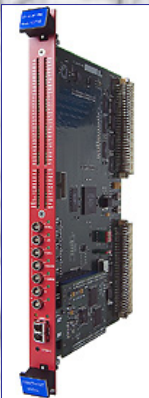
HV Power Supplies & Front End Instrumentation for Particle & Nuclear Physics



CAEN 21-slot 6U VME crate, with VME64 compliant backplane. A 1U space is reserved for fan tray. The Unit is powered by $100 \div 230$ VAC, $50 \div 60$ Hz, power factor 0.95 (230VAC). The main fuse is F10A, fast type.



Mod. V1718 is a 1-unit wide 6U VME master module which can be operated from the USB port of a standard PC; the board can perform all the cycles foreseen by the VME64 (except those intended for 3U boards). The board can operate as VME System Controller (normally when plugged in the slot 1) acting as Bus Arbiter in Multimaster systems. The VME bus activity can be monitored in detail, both locally (through a LED display) and remotely. The front panel includes also 5 TTL/NIM programmable outputs on LEMO 00 connectors (default assignment is: DSO/1, AS, DTACK, BERR and LOCATION MONITOR) and two programmable TTL/NIM inputs (on LEMO 00 connectors). The I/Os can be programmed via USB in order to implement functions like Timer, Counter, Pulse generator, I/O register, etc. The V1718 – PC interface is USB 2.0 compliant; previous issues are also supported. USB data transfer takes place through the High Speed Bulk Transaction protocol; the sustained data rate on the USB is up to 30 MByte/s in BLT Read cycles. Thanks to the 128KB memory buffer, the activity on the VME bus is not slowed down by the transfer rate on the USB port. The Module is provided with drivers which support the use with the most common PC platforms (Windows 98 / 2000 / XP, Linux).



Mod. V2718 is a 1-unit wide 6U VME master module, which can be controlled by a standard PC equipped with the PCI controller card CAEN Mod. A2818. The connection between the V2718 and the A2818 takes place through an optical fiber cable (AY2705, AY2720, AI2705, AI2720). Multi crate sessions can be easily performed, since up to eight daisy chained (via optical fiber cables) V2718 can be controlled by one A2818, thus building a CONet (Chainable Optical Network). The V2718 can perform all the cycles foreseen by the VME64 (except those intended for 3U boards). The board can operate as VME System Controller (normally when plugged in the slot 1) acting as Bus Arbiter in Multimaster systems. The VME bus activity can be monitored in detail, both locally (through a LED display) and remotely. The front panel includes also 5 TTL/ NIM programmable outputs on LEMO 00 connectors (default assignment is: DSO/1, AS, DTACK, BERR and LOCATION MONITOR) and two programmable TTL/NIM inputs (on LEMO 00 connectors). The I/Os can be programmed in order to implement functions like Timer, Counter, Pulse generator, I/O register, etc. The sustained data transfer rate is up to 70 MByte/s.

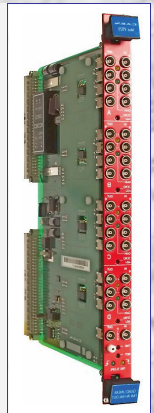


Mod. V1190B is a 1-unit wide VME 6U module that houses 64 independent Multi Hit/Multi Event Time to Digital Conversion channels. The unit features High Performance TDC chips, developed by CERN. LSB can be set at 100 ps (19 bit resolution, 52 μ s FSR), 200 ps (19 bit, 104 μ s FSR) or 800 ps (17 bit, 104 μ s FSR). The channels can be enabled for the detection of hits rising/falling edges or for their width measurement (both the edges' timing and the hit width can be measured with the selected resolution). For each channel there is a digital adjustment for the zeroing of any offsets. The data acquisition can be programmed in "EVENTS" ("TRIGGER MATCHING MODE", with a programmable time window) or in "CONTINUOUS STORAGE MODE". Both ECL and LVDS input signals are supported. The module programming is performed via a microcontroller that implements a high-level user friendly interface. The VME interface allows the module to work in A24 and A32 addressing modes. The board houses a 32 k x 32 bit deep Output Buffer, which can be read out via VME in a completely independent way from the acquisition itself. The internal registers are available in D16 mode only, while the Output Buffer is accessible in D32, BLT32 or MBLT64. It supports Chained Block Transfer mechanism & Multicast commands.

Mod. V925 is a 1-unit VME module which houses three 4 In / 4 Out and one 3 In / 3 Out sections; one Discriminator channel is also featured. Each Fan in/Fan out section produces on all its output connectors, the sum of the signals fed to the inputs, eventually inverted. Fan in/Fan out inputs are bipolar, while the output can be either inverting or non inverting (jumper selectable independently for each section). Both input and output signals are DC coupled. Maximum input amplitude is ± 1.6 V.

Each Fan in/Fan out section features a screwdriver trimmer which allows the DC offset adjustment. The discriminator channel has one DC coupled input (polarity is jumper selectable), the threshold is screwdriver adjustable and monitorable via test point; the output is NIM standard, its width is screwdriver adjustable as well.

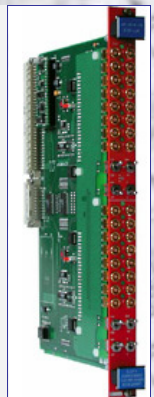
Front panel LEDs allow to monitor all the mode, gain and polarity adjustments performed via internal jumpers.



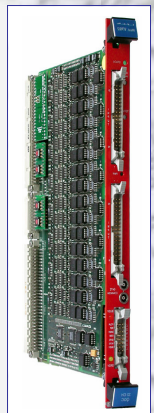
The Mod. V976 is a 1-unit VME module housing four 4-input Coincidence Fan in/Fan out and NIM – TTL / TTL – NIM adapter sections. Each section features 4 inputs and 4 outputs on LEMO 00 connectors and can operate as a 4 channel level translator or as AND/OR gate.

It is possible to use two or four sections together to obtain an 8 or 16 input majority

The logic functions can be selected via front-panel and internal switches. Some extra functions, such as a 1 to 12 Fan Out, can be performed by cascading properly the module's sections. The output width is not regulated by a monostable, but it is equal to the duration of the input condition which makes the logic function true. The module accepts NIM and TTL inputs; the output can be programmed to provide either NIM or TTL levels as well, either direct or negated.



Mod. V792 is a 1-unit wide VME 6U module housing 32 Charge-to-Digital Conversion channels with current integrating negative inputs (50 Ohm impedance). For each channel, the input charge is converted to a voltage level by a QAC (Charge to Amplitude Conversion) section. Input range is $0 \div 400$ pC. The outputs of the QAC sections are multiplexed and subsequently converted by two fast 12-bit ADCs. The integral non linearity is $\pm 0.1\%$ of Full Scale Range (FSR) measured from 5% to 95% of FSR. The ADCs use a sliding scale technique to improve the differential non-linearity. The Mod. V792 offers a 32 event buffer memory, A24/A32 addressing mode, D16, D32, BLT32/MBLT64 and CBLT32/CBLT64 data transfer mode. Multicast commands are also supported. A 16 ch. decoupling board Mod. A992 is available for the Mod. V792 to avoid ground loops and signal reflections when long flat cable (110 Ohm) connections to the 50 Ohm inputs are used (one V792 requires two A992 boards). A 16 channel flat cable to LEMO input adapter, Mod. A392 is also available for the Mod. V792 (one V792 requires two A392 boards). The board supports the live insertion that allows inserting or removing them into the crate without switching it off.



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EASY 3000 High / Low Voltage Multichannel System for Hostile Area

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