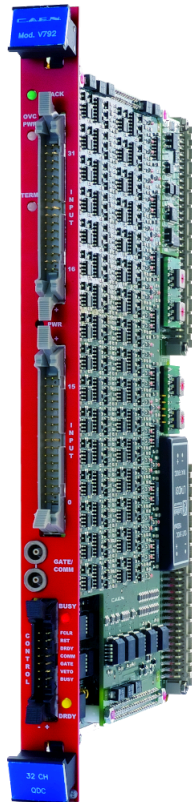


# V792

## 32 Channel Multievent QDC



## Features



- High channel density
- 12-bit resolution
- 5.7  $\mu$ s / 32 ch conversion time
- 600 ns fast clear time
- Zero and overflow suppression for each channel
- $\pm 1.5\%$  differential non linearity
- $\pm 0.1\%$  integral non linearity
- 32 event buffer memory
- BLT32/MBLT64/CBLT32/CBLT64 data transfer
- Multicast commands
- Live insertion
- Libraries, Demos (C and LabView) and Software tools for Windows and Linux

## Description

The **Mod. V792** is a **1-unit wide VME 6U module** housing 32 Charge-to-Digital Conversion channels with current integrating negative inputs (50  $\Omega$  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.

## Technical Specifications

### Packaging

1-unit wide 6U VME module (version AA requires the V430 backplane)

### Inputs

32 channels, 50  $\Omega$  impedance, negative polarity, DC coupling

### Input range

0 ÷ 400 pC (if Sliding Scale is used FSR is reduced from 4095 to 3840 counts)

### Resolution

12 bit

### Gain

100 fC/count

### Max. tolerated positive voltage input

15 mV

### Reflections

< 5% with 2 ns fall time input signals

### Input offset

$\pm 2$  mV

### RMS Noise

0.5 counts typical

### Noise

Gate width (ns) / Iped (count) / Average (count) /  $\sigma$  (count)

100 / 180 / 107.58 / 0.50

500 / 180 / 326.44 / 0.54

1000 / 180 / 597.32 / 0.56

2000 / 180 / 1139.92 / 0.61

Measured with GATE input only (no input on QDC channels)

### Integral non linearity

0.1% of FSR (=3840 counts)  
from 5% to 95% of FSR

### Interchannel gain uniformity

$\pm 4\%$

### Interchannel Isolation

> 60 dB

### Power rejection

0.002 count/mV (+5V); 0.01 count/mV (-5V)  
0.0046 count/mV (+12V); 0.0012 count/mV (-12V)

### Fast clear time

600 ns

### Gate timing

the Gate signal must precede the analog input by > 15 ns

### Conversion time

5.7  $\mu$ s for all channels

### Zero suppression

Threshold values programmable in:  
16 ADC counts steps over the entire FSR  
2 ADC counts steps over 1/8 of FSR

### GATE/COM input

NIM signal, high impedance  
temporal window for current integration

### Control inputs

Active-high, differential ECL input signals:

- GATE: temporal window for current integration
- RST: resets QAC sections, MEB status and control registers
- VETO: inhibits the conversion of the QAC signals
- FCLR: FAST CLEAR of QAC sections

### Control outputs

Differential ECL output signals:

- DRDY: indicates the presence of data
- BUSY: board full, resetting, converting or in MEMORY TEST mode

### VME interface

A24/A32  
Geographical Addressing  
Multicast commands  
D16/D32, BLT32/MBLT64, CBLT32/CBLT64

## Ordering Options

Code	Description	
WV792XACAAA	V792AC - 32 Channel Multievent Charge ADC (No JAUX, No 12V DCDC, live ins)	RoHS

## Accessories

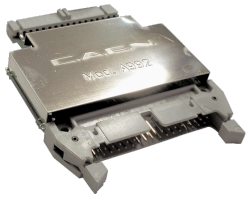
### A392



Adapter 16x LEMO 00 female (or MCX male) to 2.54mm 34-pin female – 50 cm / 1 m

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### A992



16 Channel Impedance Adapter

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## Related Products

### VX3718



VME64 to USB 2.0/Optical Link Bridge

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### VME8008B



4U 8 Slot VME64 Mini Crate

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### VME8100



8U 21 Slot VME64/64X Enhanced Crate Series

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### VME8004X



2U 4 Slot VME64X Mini Crate

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### VME8011



7U 21 Slot VME64 Low Cost Crate

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### VME8200



9U 21Slot VME64X Enhanced Crate series

### VME8010



7U 21 Slot VME64 Low Cost Crate

### VX4718



VME to USB 3.0/Ethernet/Optical Link Bridge

### VME8004B



2U 4 Slot VME64 Mini Crate

### NV8020A



7U CRATE VME/NIM 8 slot VME64 365W, 5 slot NIM 150W

## VME8008X



4U 8 Slot VME64X Mini Crate

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## VME8008XB

## V4718



VME to USB 3.0/Ethernet/Optical Link Bridge

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## V3718



VME to USB 2.0 / Optical Link Bridge

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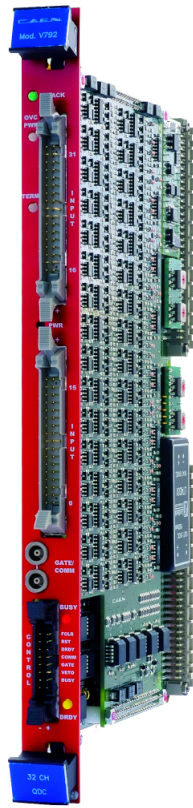
## VME8001



1U 2 Slot VME64 Mini Crate

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# Gallery



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