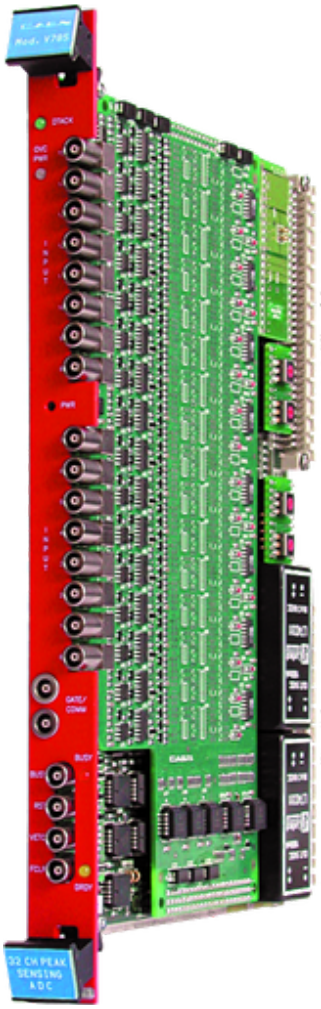
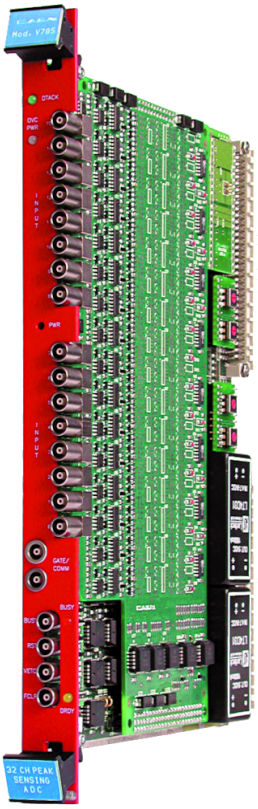
CAEN
*Tools for Discovery*

# V785N

# 16 Channel Multievent Peak Sensing ADC



## Features



- High channel density
- 12 bit resolution
- 2.8 µs / 16 ch conversion time
- 600 ns fast clear time
- Zero and overflow suppression for each channel
- ±1.5% differential non linearity
- ±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. V785N** is a 1-unit wide VME 6U module housing 16 **Peak Sensing Analog-to-Digital Conversion** channels. Each channel is able to detect and convert the peak value of the positive analog signals (with >50 ns risetime) fed to the relevant connectors. Input voltage range is 0 ÷ 4 V. The Mod. V785 N features LEMO 00 connectors for both input and control signals.
The outputs of the PEAK sections are multiplexed and subsequently converted by two fast 12-bit ADCs (2.8 µs for all channels).
The integral non linearity is ±0.1 of full scale range (FSR), measured from 2% to 97% of FSR; the differential non linearity is ±1.5% of FSR, measured from 3% to 100% of FSR. The ADCs use a sliding scale technique to reduce the differential non-linearity.
Programmable zero suppression, multievent buffer memory, trigger counter and test features complete the flexibility of the unit.
The module works in A24/A32 mode. The data transfer occurs in D16, D32, BLT32 or MBLT64 mode. The unit **supports also the Chained Block Transfer** (CBLT32/CBLT64) and the Multicast commands.
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

### Inputs

16 channels, 1 kΩ impedance, positive polarity, DC coupling

### Resolution

12 bit

### Full Scale Range

4 V (if Sliding Scale is used FSR is reduced from 4095 to 3840 counts)

### Min. Detectable signal

10 mV

### Min. Input rise time

50 ns

### RMS Noise

0.8 counts typical, 2 counts maximum

### Integral non Linearity

0.1% of FSR (=3840 counts)
from 2% to 97% of FSR measured with > 100 ns rise time input signals

### Differential non linearity

±1.5% from 3% to 100% of FSR (=3840 counts) measured with 1 µs rise time input signals

### Interchannel Isolation

> 60 dB

### Power rejection

0.007 count/mV (+5V); 0.02 count/mV (+12V); 0.003 count/mV (-12V)

### Max. Gate width

1 ms

### Temperature Stability

- Offset: 0.12 counts/°C
- Gain: 25 ppm/°C

### Fast clear time

600 ns

## Conversion time

2.8 µs 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 input

NIM signal, high impedance

## Control inputs

Standard NIM input signals:

- GATE: temporal window for peak detection
- RST: resets PEAK sections, MEB status and control registers
- VETO: inhibits the conversion of the peaks
- FCLR: FAST CLEAR of PEAK sections and conversion

## Control outputs

Standard NIM 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 | |
|---|---|---|
| WV785XNCAAAA | V785NC - 16 Channel Peak Sensing ADC (4V, No JAUX,No 12V DCDC, live ins) | RoHS |
| WV785XNDAAAA | V785ND - 16 Channel Peak Sensing ADC (4V, No JAUX,12V DCDC, No live ins) | |

# Accessories

## A316

Cable assembly 2.54mm 2-pin header female - 5 cm

## Related Products

### VME8001

1U 2 Slot VME64 Mini Crate

### V3718

VME to USB 2.0 / Optical Link Bridge

### VX3718

VME64 to USB 2.0/Optical Link Bridge

### VME8008B

4U 8 Slot VME64 Mini Crate

### V4718

VME to USB 3.0/Ethernet/Optical Link Bridge

## VME8008XB

## NV8020A

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

## VME8004B

2U 4 Slot VME64 Mini Crate

## VME8008X

4U 8 Slot VME64X Mini Crate

## VME8010

7U 21 Slot VME64 Low Cost Crate

**VX4718**

VME to USB 3.0/Ethernet/Optical Link Bridge

**VME8002**

5U 9 Slot VME64 Mini Crate

**VME8200**

9U 21Slot VME64X Enhanced Crate series

**VME8011**

7U 21 Slot VME64 Low Cost Crate

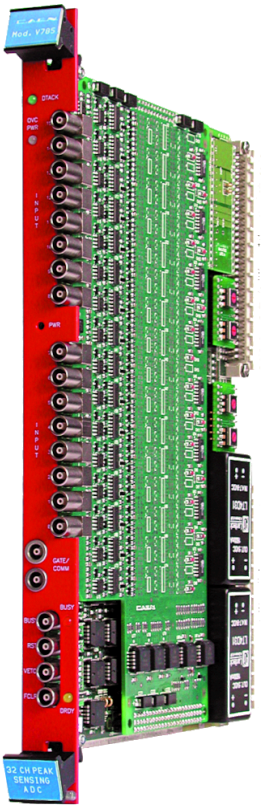
**VME8004X**

2U 4 Slot VME64X Mini Crate

**VME8100**

8U 21 Slot VME64/64X Enhanced Crate Series

## Gallery


Mod. V785
DTACK
PWR
GATE/
CONM
BUSY
BUSY
RST
VETO
FCLR
DRDY
32 CH PEAK
SENSING
ADC

**CAEN S.p.A.**
Via Vetraia 11
55049 - Viareggio
Italy
**Phone +39.0584.388.398**
**Fax +39.0584.388.959**
**info@caen.it**
**www.caen.it**

**CAEN GmbH**
Brunnenweg 9
64331 Weiterstadt, Germany
**Phone +49 (0)212.254.4077**
**Mobile +49 (0)151.16.548.484**
**info@caen-de.com**
**www.caen-de.com**

**CAEN Technologies, Inc.**
1 Edgewater Street - Suite 101
Staten Island, NY 10305
USA
**Phone +1.718.981.0401**
**Fax +1.718.556.9185**
**info@caentechnologies.com**
**www.caentechnologies.com**

**CAENspa India Private Limited**
B205, BLDG42, B Wing,
Azad Nagar Sangam CHS,
Mhada Layout, Azad Nagar, Andheri West
Mumbai, Maharashtra 400053, India
**info@caen-india.in**
**www.caen-india.in**