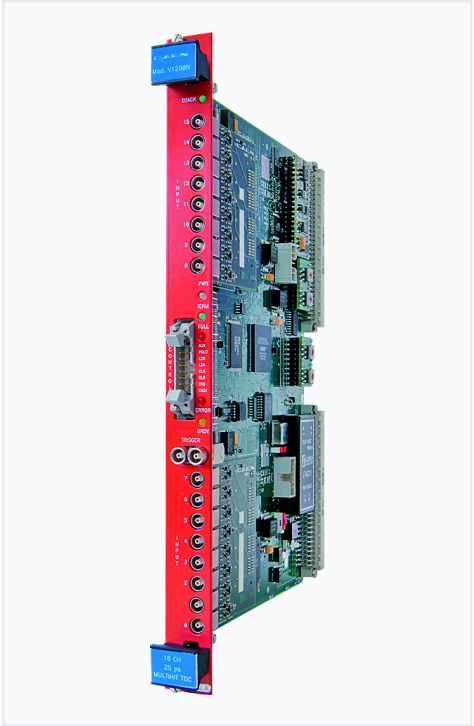
V1290N-2ESST

16 Channel Multihit TDC (25 ps)

VME	16	21
Package	No. of Channels	Resolution (bit)

The V1290N-2eSST is a 16-channel multihit TDC in a 1-unit-wide VME 6U module, featuring CERN-developed high-performance time-to-digital converter chips, 25 ps LSB, 21 bit resolution and 52 µs full scale range. It accepts NIM input signals, detects leading and trailing edges, and provides 5 ns double-hit resolution with digital zero-offset adjustment per channel. Trigger Matching and Continuous Storage acquisition modes are supported, with a 32 k x 32 bit output buffer and MBLT, CBLT and 2eSST VME readout.



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Tools for Discovery

Overview

Product Highlights

- 25 ps LSB
- 52 µs full scale range
- 5 ns Double Hit Resolution
- Trigger Matching and Continuous Storage acquisition modes
- MBLT, CBLT and 2eSST data transfer
- Live Insertion
- 21 bit resolution
- NIM Input Signals
- Leading and Trailing Edge detection
- 32 k x 32 bit output buffer
- Multicast commands

Product Description

AT A GLANCE	
Package	**VME**
No. of Channels	**16**
Resolution (bit)	**21**
Type	**Multihit Digital TDC**
Conversion Time (µs)	**-**
LSB (ps)	**25**

The CAEN **Mod.V1290N-2eSST** is a 1**6 channel Multihit TDC**, housed in a **1-unit wide VME 6U module**. The unit features High Performance Time to Digital Converter chips developed by CERN.

- LSB is 25 ps (21 bit resolution, 52 µs FSR).

The module accepts NIM inputs. The channels can be enabled for the detection of hits rising/falling edges. For each channel there is a digital adjustment for the zero-ing of any offsets. The data acquisition can be programmed in "Events" ("Trigger Matching Mode", with a programmable time window) or in "Continuous Storage Mode".
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, that can be readout via VME in a completely independent way from the acquisition itself.

The device supports **MBLT**, **CBLT** and **2eSST** readout modes. Live insertion is also supported.

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Technical Specifications

Packaging	6U-high, 1U-wide VME unit
Inputs	16 NIM, 50 Ohm impedance
Double hit resolution	5 ns
Acquisition modes	Trigger Matching Mode; Continuous Storage Mode
Built-in memory	32 kwords deep Output Buffer
Trigger Window Width	Programmable from 25 ns to 100 µs
Dynamic Range	52 µs

LSB

25 ps

RMS resolution	< 35 ps (typical)
Integral non linearity	< 2.5 LSB
Differential non linearity	< 3 LSB
Interchannel Isolation	≤ 3 LSB
Offset spread	< 2 ns
EXT TRIGGER input	Two LEMO 00 bridged connectors, NIM signal, 50 Ohm
Clock source	Internal (40 MHz) or External (on Control connector), dip switch selectable

Control inputs

NIM std. input signals:
- RST: resets Output Buffer, Status and Control registers.
- CLR: FAST CLEAR of TAC sections rising-edge active,differential

Differential ECL input signals:
- CLK: external clock
- TRG: trigger for the TDC latching

Control outputs	NIM std. signal: OUT_PROG: control output signal, programmable via the out prog control register

Displays

- DTACK: green LED; lights up at each VME access.
- PWR: green/red LED; green: power ON, red: failure status.
- TERM: green LED; control bus termination ON.
- FULL: red LED; memory full.
- ERROR: red LED; TDC global error.
- DRDY: yellow LED; at least one datum in the output buffer

VME

Addressing modes: A24, A32, MCST Data transfer modes: D16, D32, BLT32, BLT64, CBLT, 2eSST

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Ordering Information

ORDERING CODE	DESCRIPTION
WV1290BNXAAE	V1290N – 2ESST 16 Ch. Multievent Multihit TDC 25 psec NIM (no JAUX)

1. Ordering codes and descriptions are reproduced from the product record. Availability is confirmed at order entry.

Related Products

NV8020A — 7U CRATE VME/NIM 8 slot VME64 365W, 5 slot NIM 150W

V3718 — VME to USB 2.0 / Optical Link Bridge

V4718 — VME to USB 3.0/Ethernet/Optical Link Bridge

VME8001 — 1U 2 Slot VME64 Mini Crate

VME8004B — 2U 4 Slot VME64 Mini Crate

VME8004X — 2U 4 Slot VME64X Mini Crate

VME8008B — 4U 8 Slot VME64 Mini Crate

VME8008X — 4U 8 Slot VME64X Mini Crate

VME8011 — 7U 21 Slot VME64 Low Cost Crate

VME8100 — 8U 21 Slot VME64/64X Enhanced Crate Series

VME8200 — 9U 21Slot VME64X Enhanced Crate series

VX3718 — VME64 to USB 2.0/Optical Link Bridge

VX4718 — VME to USB 3.0/Ethernet/Optical Link Bridge

Software & Control Tools

CAEN Toolbox — Multi-Functional Software Suite for the Upgrade of Front-end Boards, Bridges and Power Supplies

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