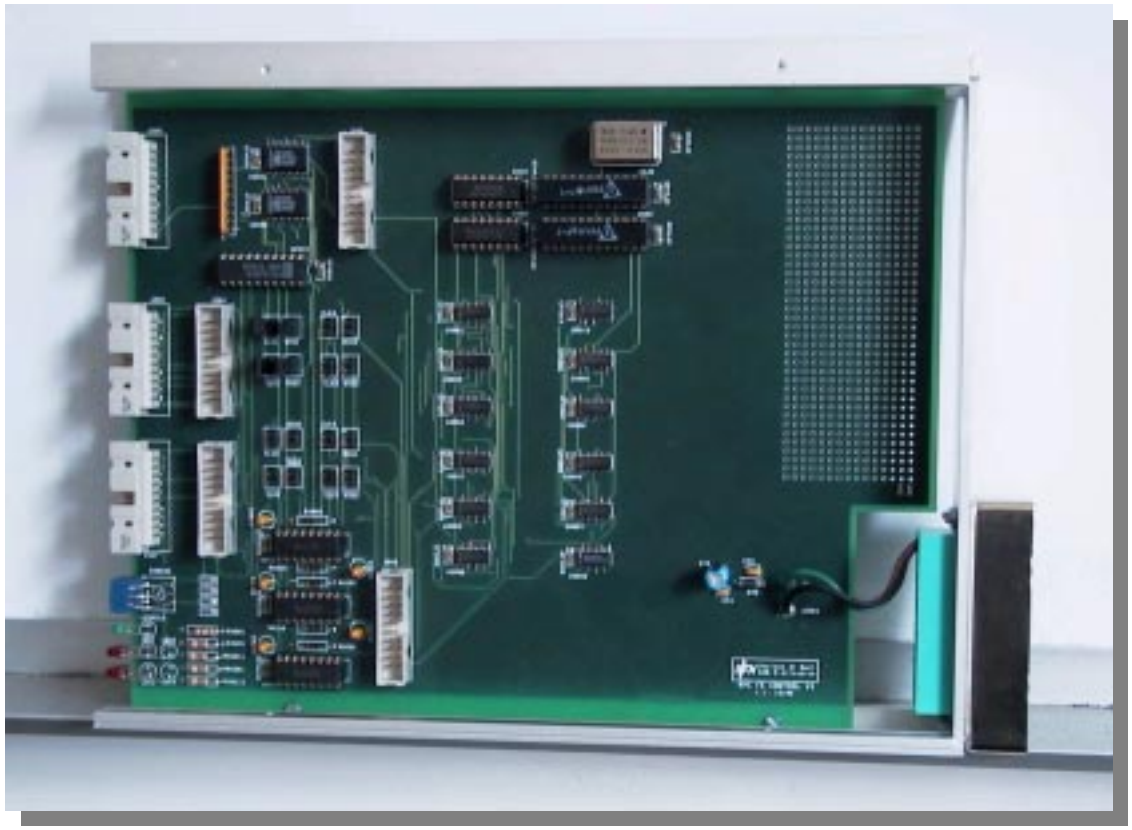
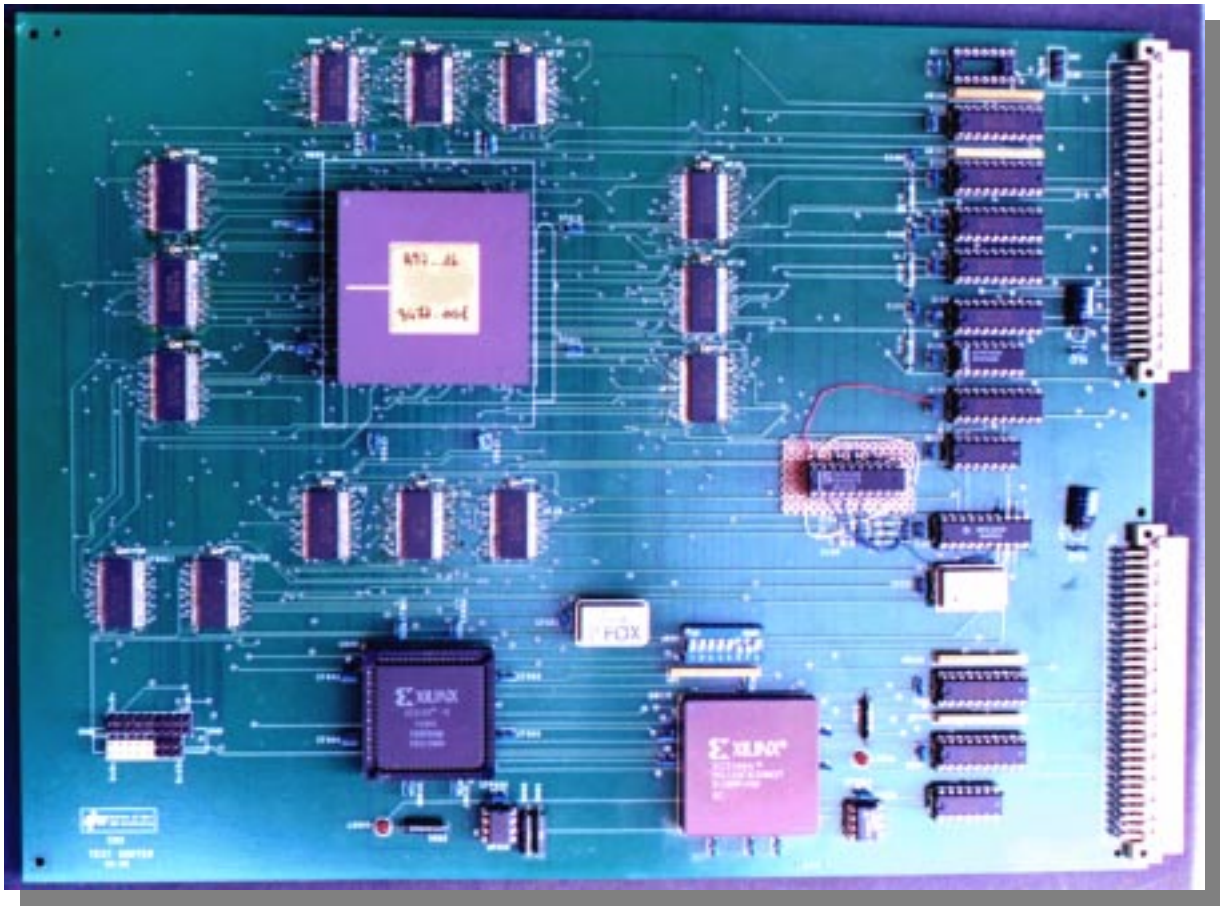
Clock & Control Module



The synchronization of discriminated signals coming from the RPC in CMS experiment at CERN, is a crucial problem for triggering on good events.
A NIM Clock module, running at 40 MHz (the LHC clock frequency), has been built, to test the performance of the Synchronization electronics, designed to run nearby the RPC Front End electronics. It sends out onto 4 output ports, one Clock and one Window pulse with programmable phase and duty cycle.
The module also output 4 general purpose control serial lines controlled by using a serial PC port allowing a Daisy Chain connection type, useful to control 4 x N ports in total.

Sorter Test Board

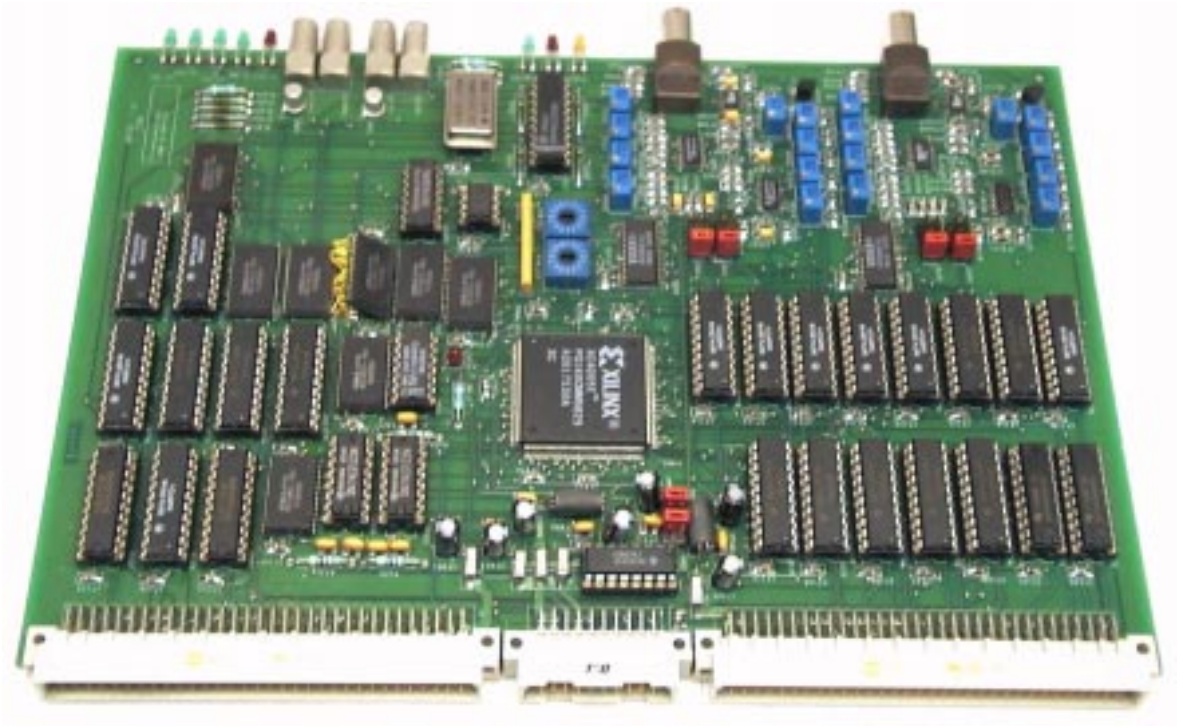


A VME Test Board to verify the performances of the SORTER processor developed in 0.8 μ BiCMOS technology and developed for the muon trigger system of the CMS experiment. The board contains some FIFO's to test the internal Boundary Scan structure of the SORTER. It runs with a 66 MHz as a maximum master clock, to test completely the SORTER performance.

LVDS-Receiver ECL-Converter

**An LVDS Receiver module,
has been built to receive LVDS digital signals
and convert them into ECL output signals.
This NIM module contains a total of 32 channels
and it has been designed to convert the
Low Voltage Differential Signals used to achieve
high data rate, low power and to reduce EMI effects
in signals transmission, into ECL signals,
used in standard data acquisition modules.**

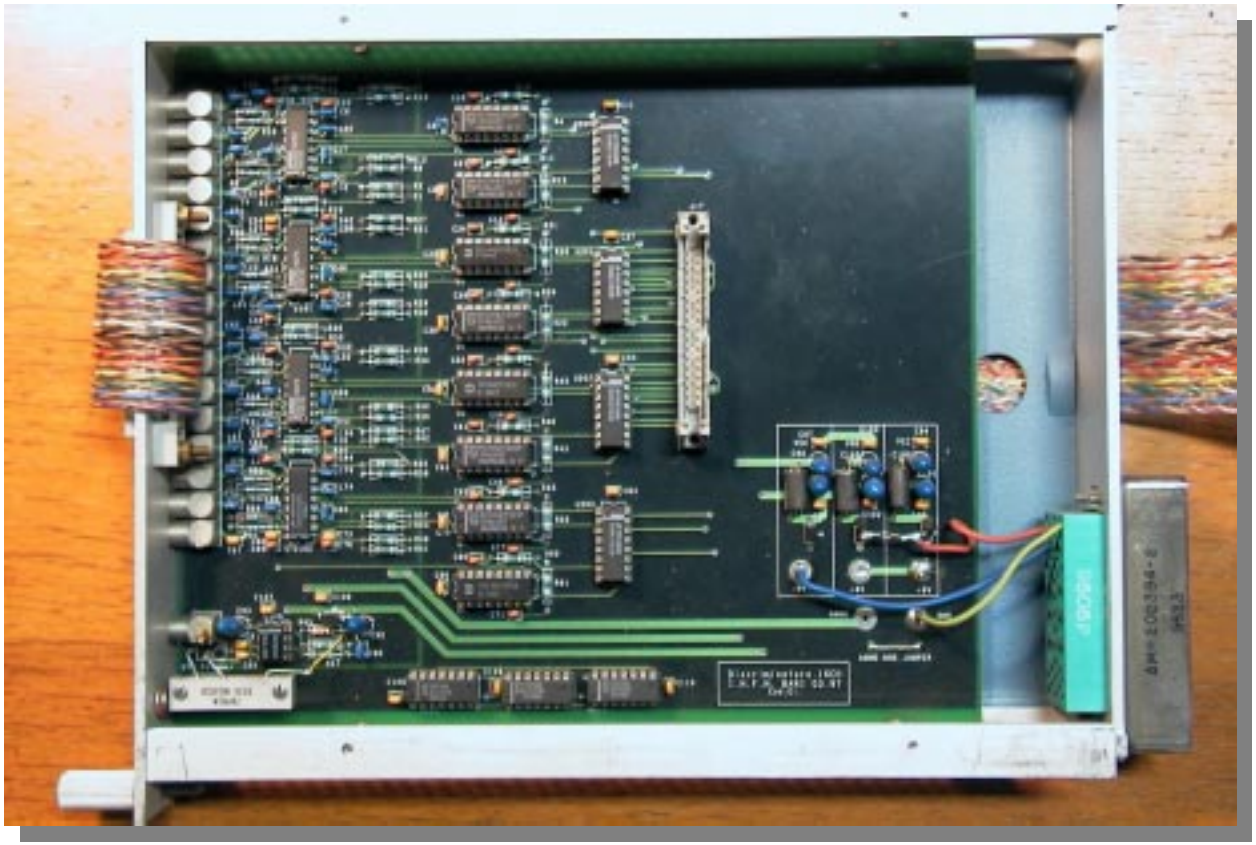
FADC Module



TTL Differential Receiver

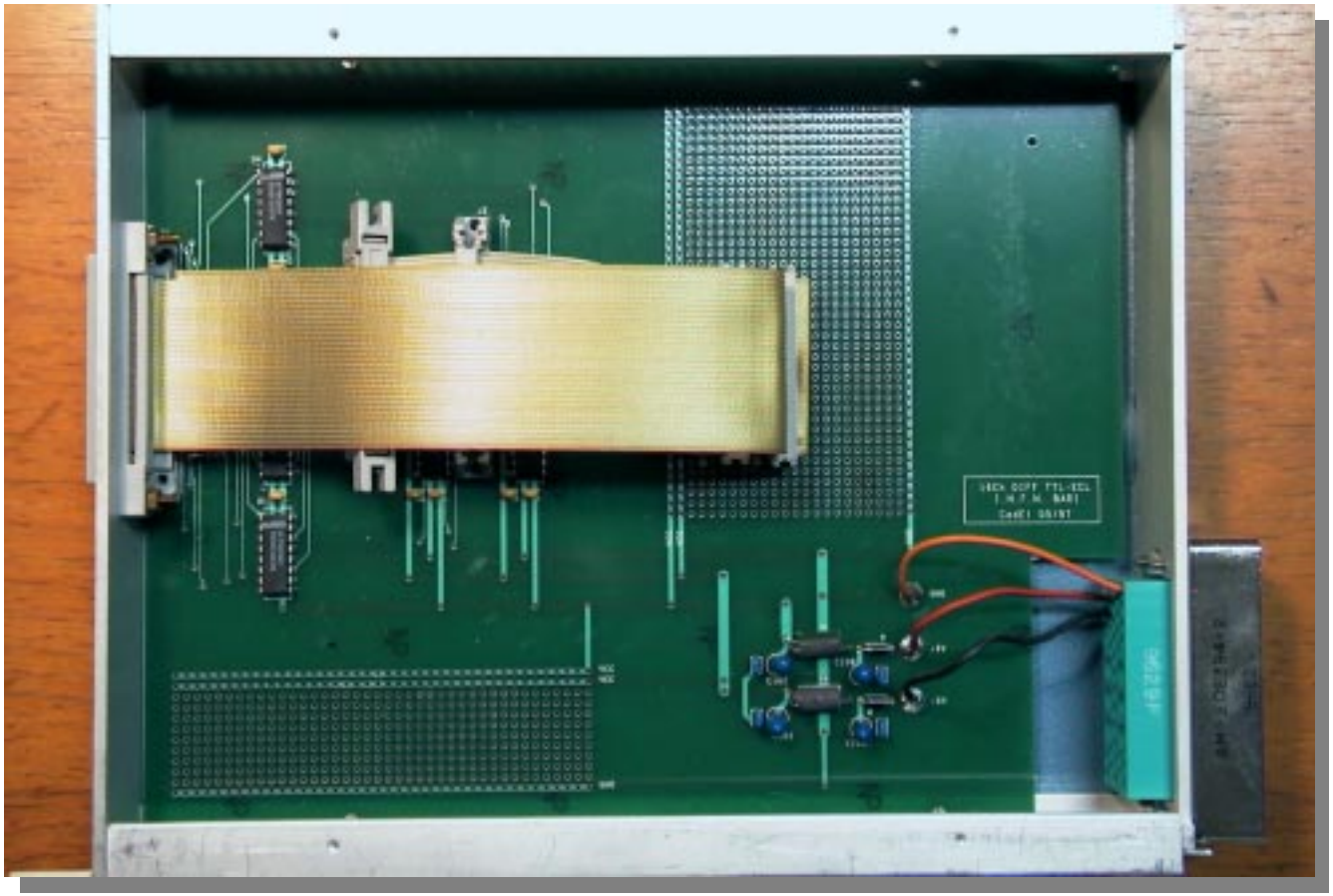
A 16 channels TTL- NIM converter used to receive TTL differential signals and to convert them into NIM output signals, with the possibility to set a programmable delay (0-200 ns) on output, useful for triggering purposes.

Low Threshold Discriminator



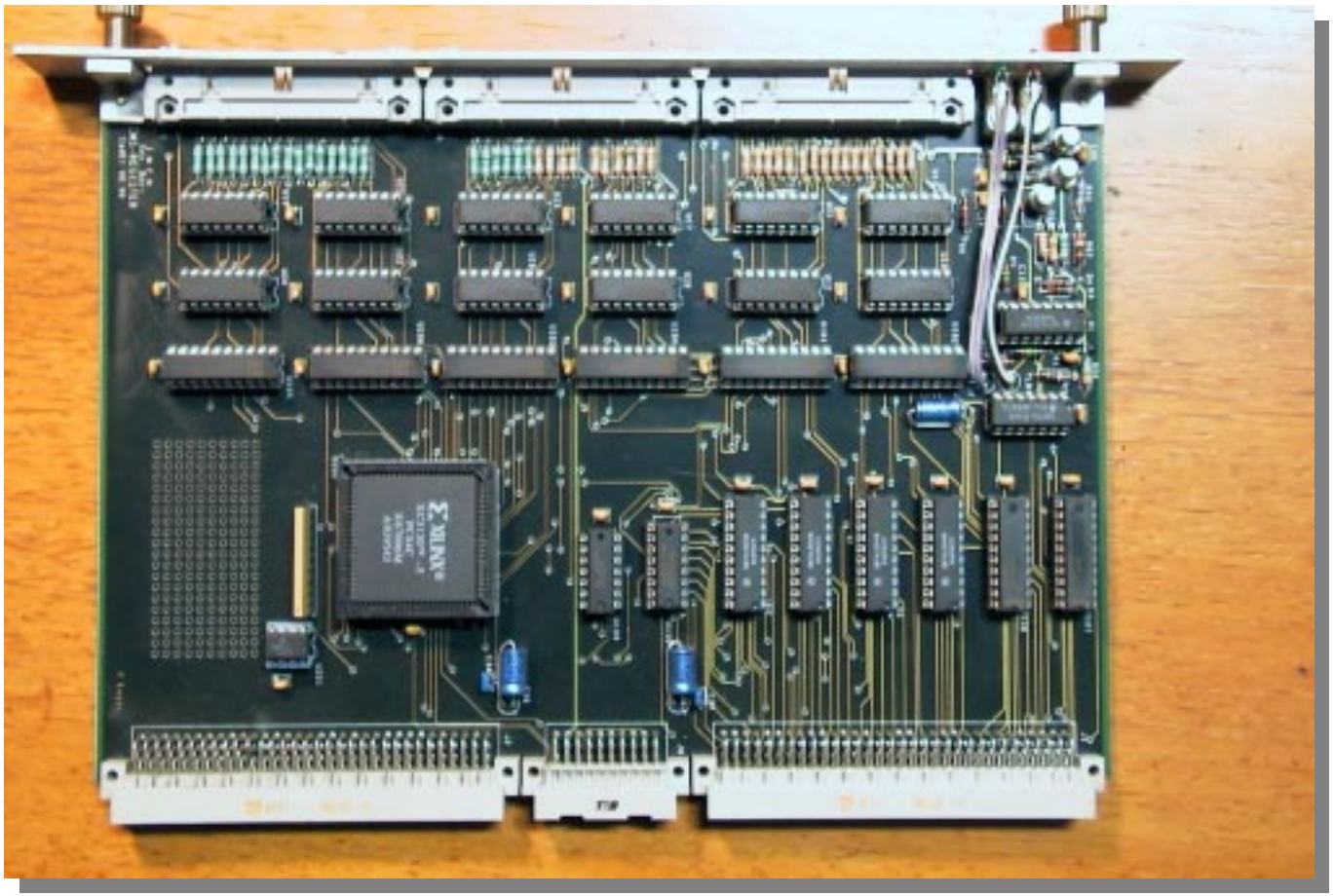
NIM Discriminator module accepting low amplitude input pulses of some mV and characterized by a fast rise time of the order of some ns (typically 1-2 ns).
It outputs 16 TTL differential level signals. The output signals are normally used to be transferred on twisted cables terminated on the receiving side by 100 Ω.
A minimum threshold of –2 mV is possible to set as input to the discriminator, whose output is shaped as a digitized signals of variable width up to 100 ns.
Moreover a Fast-OR signal of the 16 discriminated input signals (NIM output level) is given as independent output, useful for triggering purposes.

Differential TTL-ECL Converter



A 16 Channels Differential TTL_ECL Converter useful to receive differential pairs signal and to convert in ECL to input in standard NIM/CAMAC/VME modules

VME I/O Register



A 48 input channels VME I/O register accepting TTL differential signal levels for data acquisition system.
The module uses an external Trigger signal (NIM level), to register any input transition and a fast Clear signal (NIM level), to reset the registers content.