

## **D00210100 - MULTICHANNEL ACQUISITION SYSTEM**

The acquisition system is composed of a proprietary sub-rack, a number of acquisition boards (CAS) and one AM control board. The system is flexible because in a sub-rack it is possible to allocate from 1 to 16 CAS boards. Therefore the system is capable of acquiring up to 256 analog channels

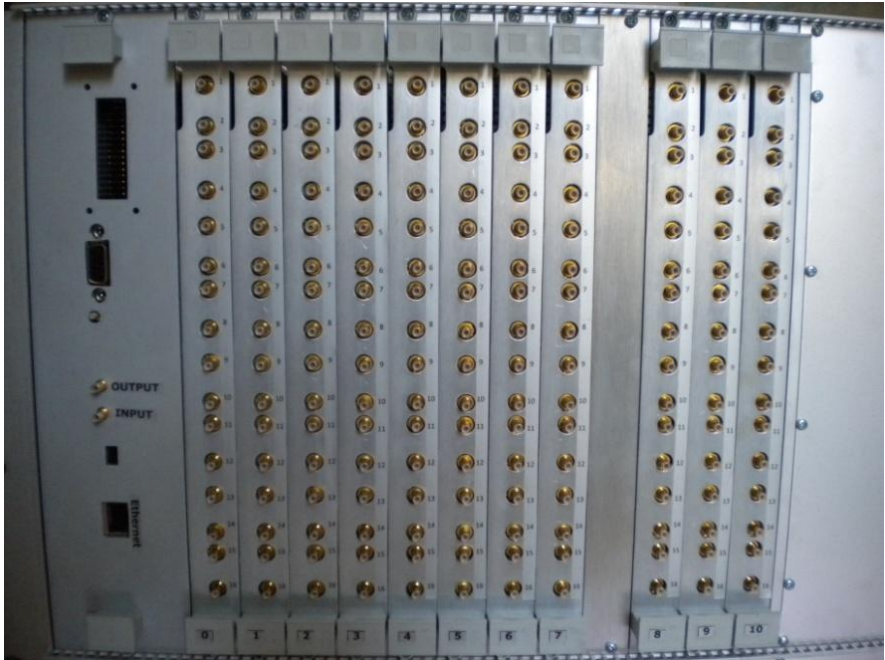
### **CAS characteristics:**

- Simultaneous sampling of 16 analog channels, with data rate up to 144 KHz,
- TEDS technology is managed on the board,
- analog to digital converter with a resolution of 24 bit,
- noise level: - 140 dB with respect to maximum input level,
- channel amplification of 20 dB can be selected,
- cross-talk: - 115 dBc for adjacent channels (@ input of 1 Vpp, 1 KHz)
- harmonic distortion: first harmonic - 100 dBc, second harmonic - 130 dBc (@ input of 1 Vpp, 1 KHz)
- a DSP (ADSP21469 Sharc) is included on the board; the processor speed is 450 MHz, it is able to compute a 1024 Point Complex FFT (Radix 4, with Reversal) in 20,44  $\mu$ s,
- Galvanic separation between the analog and digital sections,
- on the board power supply is designed to reduce the conversion noise,
- provided with internal BITE in charge of supplying the input analog signal with a periodic waveform

### **AM characteristics:**

- Data acquisition from 1 to 16 CAS boards.
- FPGA (XC5VFX30T) on board can implement fast processing on data flow.
- A communicator processor (Freescale PPC MPC8349) is able to implement MMI functions or to send off the data packet to the gigabit Ethernet.
- User can implement proprietary SW on the PPC under standard Linux .

DUNE is able to implement customer algorithms on DSP, FPGA or PPC.



Multi-channels acquisition system with 11 CAS board



CAS board