Power Supplies for Sub-Structures and Sub-Detectors

On behalf of Giuliano Parrini
Power Supplies in Large Structure Tests

• In Firenze we asked CAEN and LABEN (the two firms which made prototypes for CMS Tracker PS) to give a price quote for Power Supply Units to be used during the test of structures with “large” number of detector modules

• Boundary conditions:
  - Performances and features “similar” to the ones of the prototype PS
  - Limited number of such a system
  - No special SW
The Answers

• **CAEN**: off-the-catalog units

• **LABEN**: custom PSU, following the prototypes development
CAEN Proposal

- SY1527 or SY2527 product line, floating PS
- LV: A1518, 6 channels, 4.5 V max on board output, sense lines, 6A
- HV: A1511, 12 channels, 500 V, dual current range 1/10 mA, 12 bit resolution
- The cost: 1 crate 2527 + 2 LV modules + 1 HV module = 21 KEuro
- This is equivalent to 6 PSU in the prototype terminology
- Delivery: 4 months from order
- Caen is starting to check if its products meet the isolation, noise, overshoots requirements of the CMS Tracker prototype. SW fulfills needs.
LABEN Proposal

- According to our specifications a PSU unit has 2 HV channels, 500 V, 20 mA, 1 channel 2.5 V, 13 A, 1 channel 1.25 V, 7 A.
- 1 crate houses up to 3 PSM modules, each PSM consisting of 2 PSU
- PSU Controlled via CAN bus
- The cost: 1 crate + 6 PSU = 28 KEuro
- (The cost for 1 crate + 2 PSU = 16 KEuro)
- Prices include PCI CAN bus interface PCI card (computer not included!)
- Delivery: 5 months from order
- SW developed in Firenze (A. Bocci); new ‘smart’ firmware by end 2002. SW upgrades in progress.
Remarks

• **CAEN**
  - PSU has 6 A max: is this suitable for our needs?
  - Will it satisfy noise, isolation etc. requirements?
  - Discount foreseen if we buy more than 3 systems

• **LABEN**
  - Extra cost to start production “una tantum”....
  - We have to tell them the minimum quantity we will buy before they start