SRS-ATCA system

status report

eicSys GmbH
Embedded Integrated Control Systems

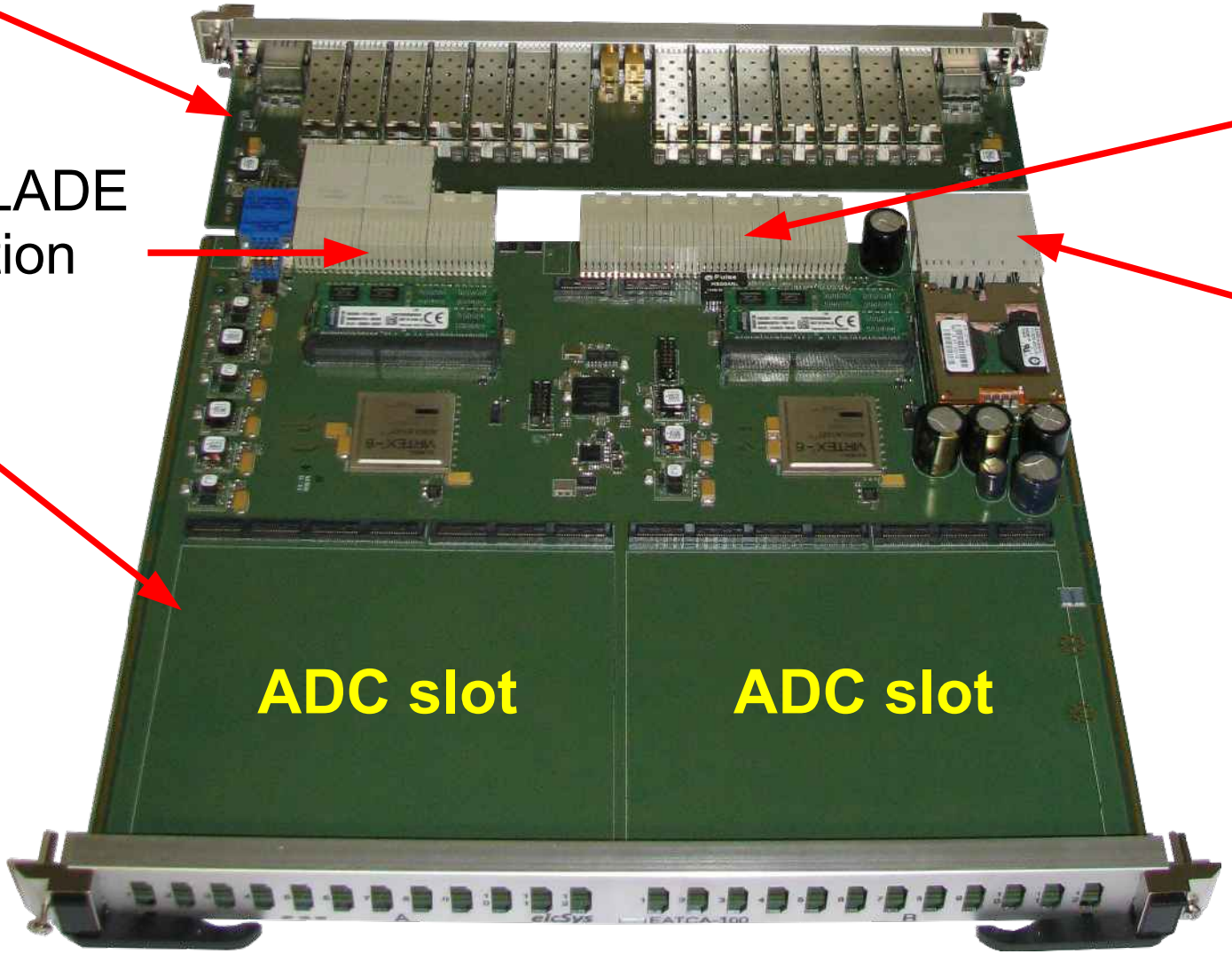
SRS ATCA based system

SRS-ATCA 2U System

1 x 2-slot ATCA crate
2 x blade
2 x RTM
4 x ADC

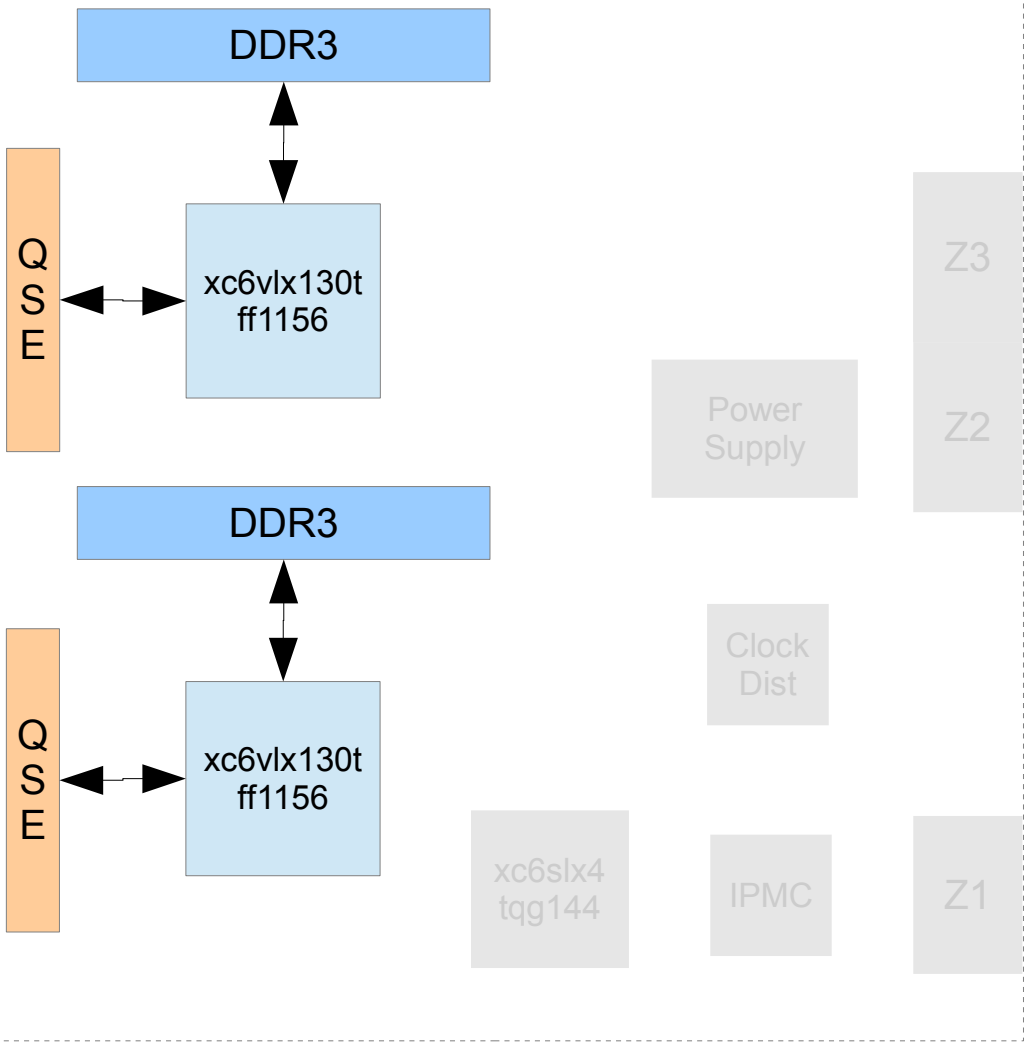
48 HDMI connector
96 analog channels
12288 detector channels
AC power
19 inch
Very efficient cooling
Telecommunication crate standard

ATCA blade and RTM



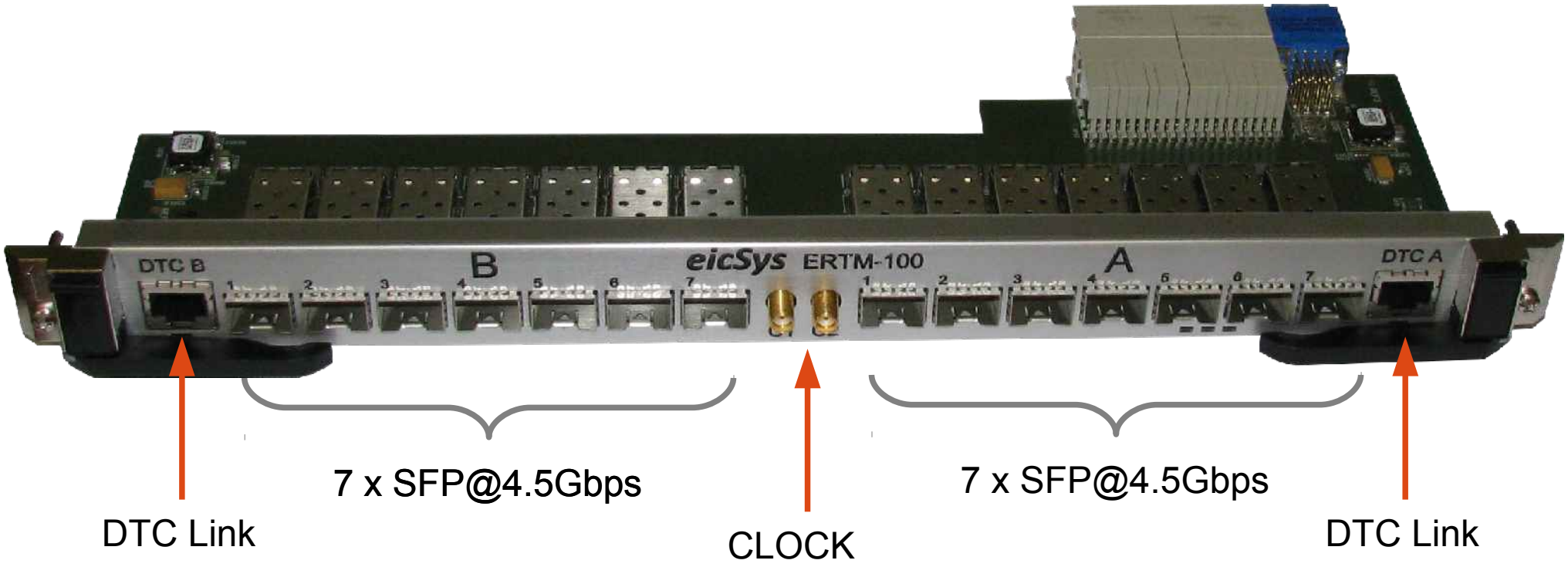
2nd revision – mechanics and board management have to be changed

EATCA-100
mezzanine connectivity



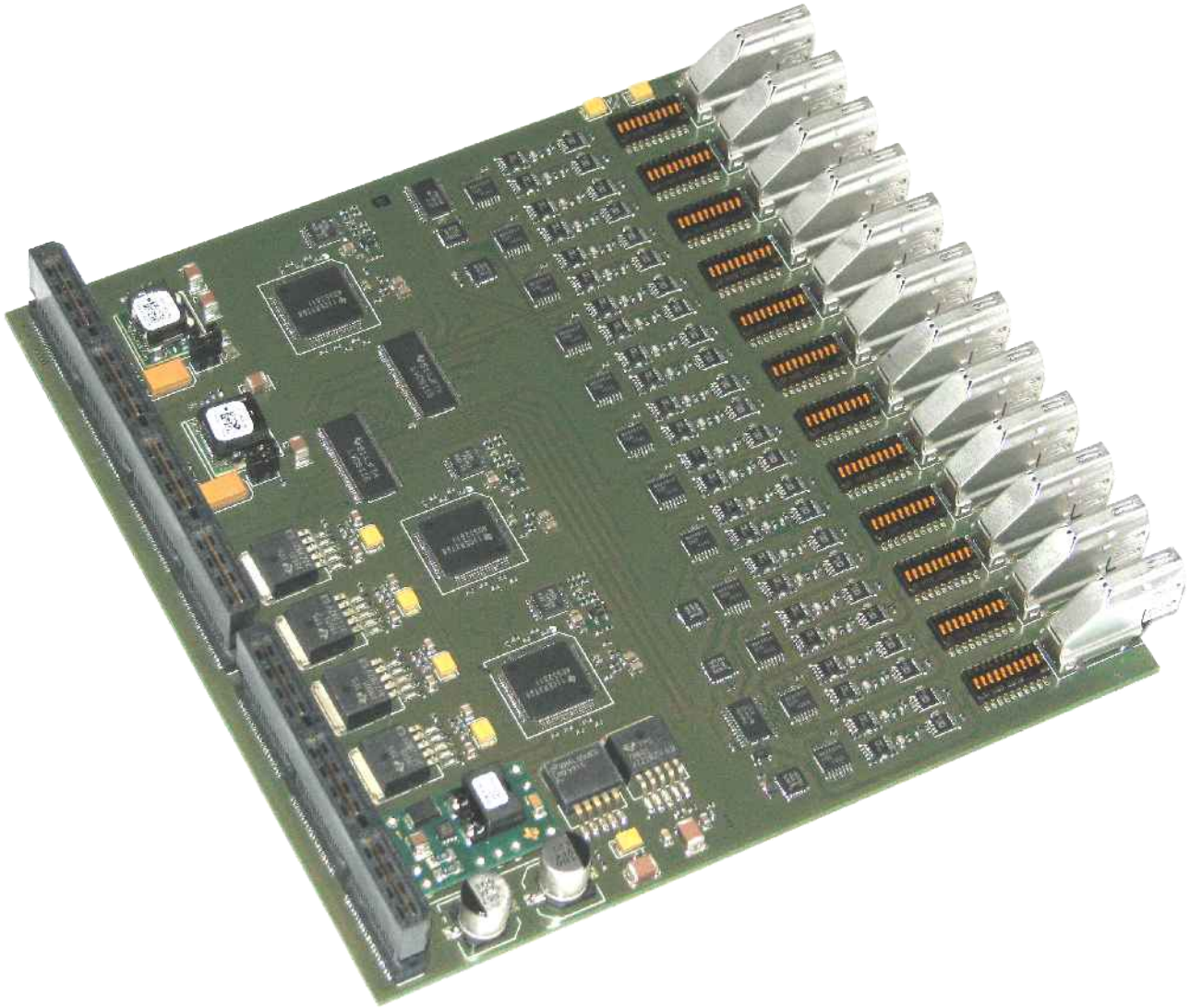
- Each Virtex 6 is connected to separate DDR3 memory and mezzanine card
- Mezzanine connector consists of 2 QSE connectors with 4 and 3 segments – high density (40 differential pairs for data, 10 clock dedicated and 20 single ended connections)
- DDR3 connections based on Xilinx MIG tools – operation up to 533 MHz possible
- 8 Gigabit full duplex channels to each mezzanine
- The same firmware for both FPGAs

RTM



2nd revision will be equipped with 10G interfaces

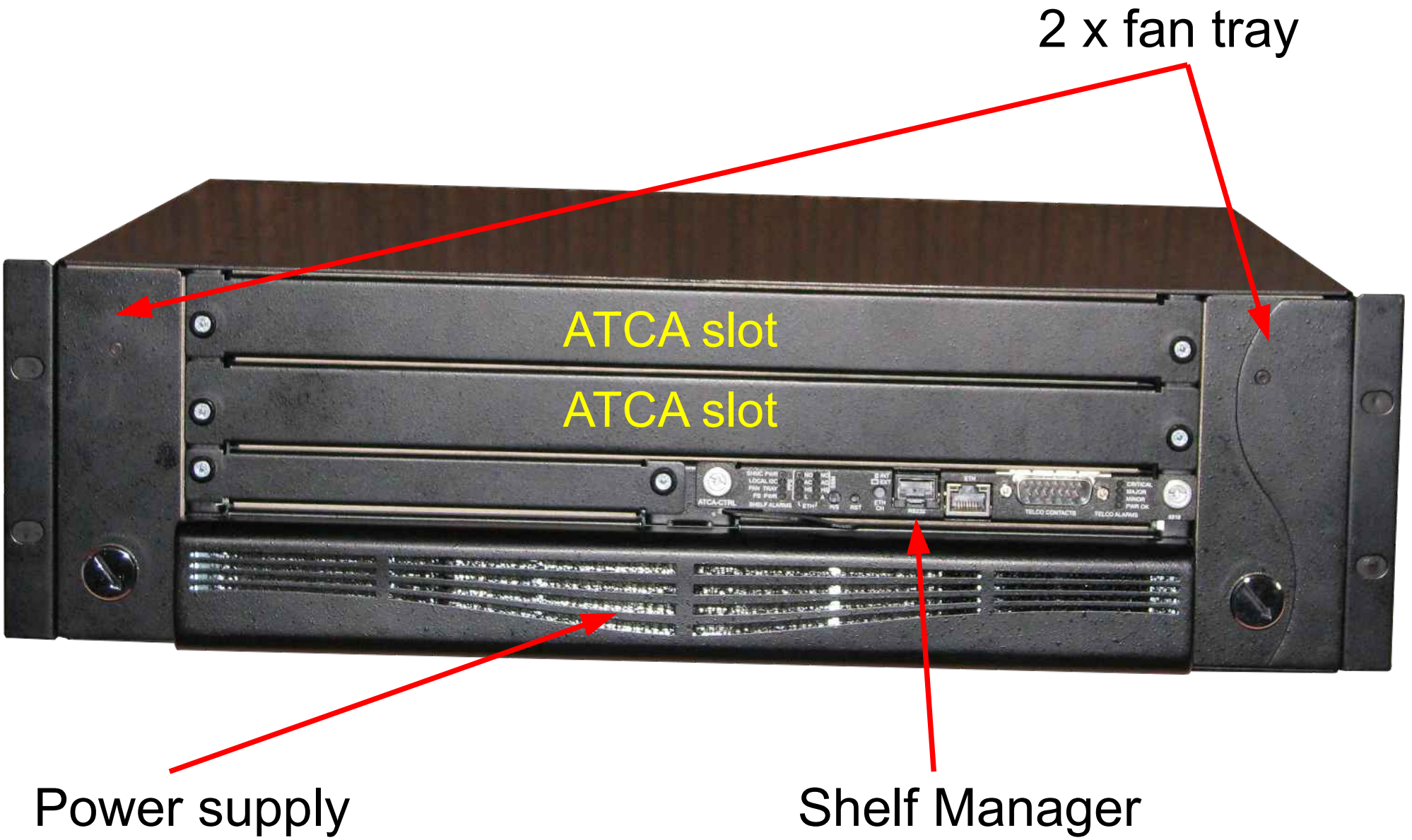
ADC Board



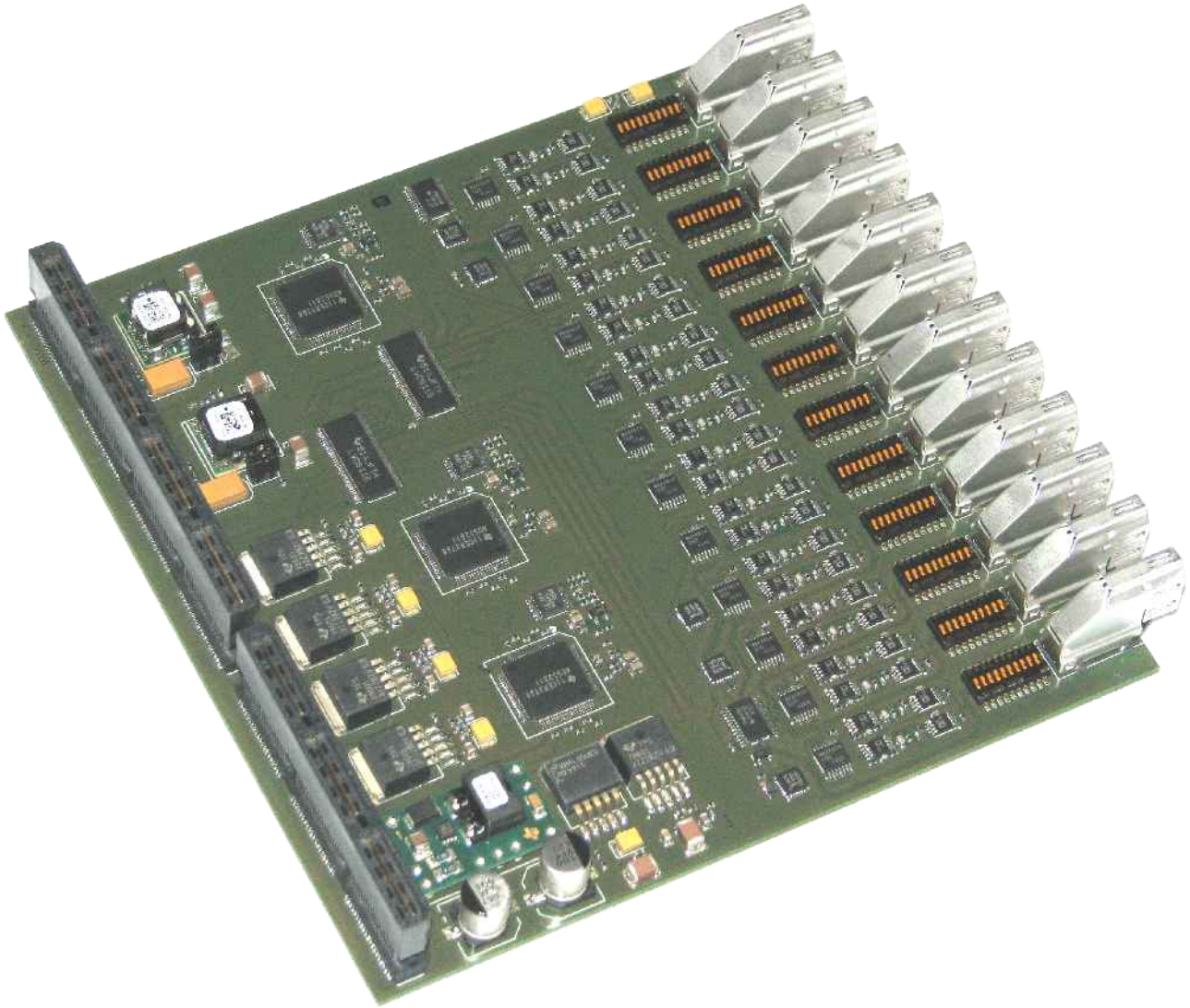
- **Features**
  - Plug-able module compatible with EATCA-100
  - 3 serial 8 channel ADCs (ADS5282) – total number of channels = 24
  - 12 HDMI connectors compatible with detector readout Hybrids (Beetle and APV based)
  - Integrated board management

Data acquisition tested **but without hybrids**

ATCA Crate



ADC Board - changes



Simplify board configuration:

- replace N I2C devices by small FPGA

- remove DIP switches

- assembly holes

SRS-ATCA System Status

4 systems ordered:

- IFIN-HH, Bucharest
- CERN
- ORNL
- Universitat Politècnica de València

Delivered to: - IFIN-HH,CERN, ORNL

UPV – delivery week 7

User manual and documentation week 7/8

Only system at CERN has all boards running, all others ADC boards have to be re-work