PZ16M
status and plans for mass production

Julien Branlard, Marcin Chojnacki, Mariusz Grecki, Konrad Przygoda, Henning Weddig
CURRENT STATUS

- PZ16M units
  - Prototypes
    -> installed at CMTB and used in digital lab for firmware development
  - ITech first 4 pre-series
    -> installed at FLASH (ACC1, ACC3, and ACC67)
    -> installed at AMTF (XATB3)
  - ITech next 2 pre-series
    -> installed at AMTF (XATB2)
    -> re-assembled with new design
- 4 more units are expected from ITech
  -> ITech waiting for our modified design
- 55 units are planned for XFEL mass production
  -> 50 for XFEL + 5 spares
Call for tender
- Stopped by DESY (CE certification, rejected vendor restriction)
- Stopped by MSK (unsatisfying design)

Collaboration with ITech
- After production of 4 units
- Misunderstanding of expectations
- Review of existing design, assembly and safety issues
- Production of 2 more units
- Reassembly of sample unit at DESY
- Shipment to ITech in coming weeks

Development of PZ16M test stand
- Hardware, firmware, software
PZ16M: status and plans for mass production

WORK DONE IN THE LAST 6 MONTHS

- Reviewed piezo incident at FLASH
  - Consequence on firmware + tests
  - Consequence on PZ16M design

- Mechanical redesign
  - Chassis assembly
    - more robust
    - easier assembly
    - easier maintenance
  - Professional production of chassis
    - PBE
    - New front/rear panels
  - Effort to prepare sample unit as professionally as possible
WORK DONE IN THE LAST 6 MONTHS

- IO expander board development
  - Address limitations of current PZ16M design
  - Provides fan speed monitoring and easier maintenance of fans
  - Provides interface to test firmware
  - Provides control over the piezo amplifier power supply
Hardware monitoring of piezo energy

- Time integration of driver voltage x current
- Disables power amplifier when over threshold
- Provides an independent control over the piezo drive
- Add-on to current design
PZ16M: status and plans for mass production

WORK DONE IN THE LAST 6 MONTHS

Julien Branlard, MSK collaboration workshop
DESY, May 12-13th 2014, DESY
FUTURE PLANS TOWARDS XFEL PRODUCTION

- Ship unit sample ITech
  - Include new PBE panels, new plates, new BOM, new documentation, new test firmware
  - Assembly of 4 remaining units
  - Extra cost due to DESY design change requests

- Evaluation of modification list for current PCB
  - Triggered for safety reasons (FPGA cold override CRYO OK)
  - Stay with minor modifications (avoid several production cycles)
  - BUT wish list is growing

- Next step:
  - Review proposal
  - Launch production and call for tender
Call for tender or split production (PCB + assembly)

CE certification ?

Modification of existing devices (FLASH, AMTF, CMTB)

Using “standard” DESY schematics

Chassis (PBE versus Schroff)

…

Thank you for your attention!