New flash ADC boards for TPC special events and neutron detectors

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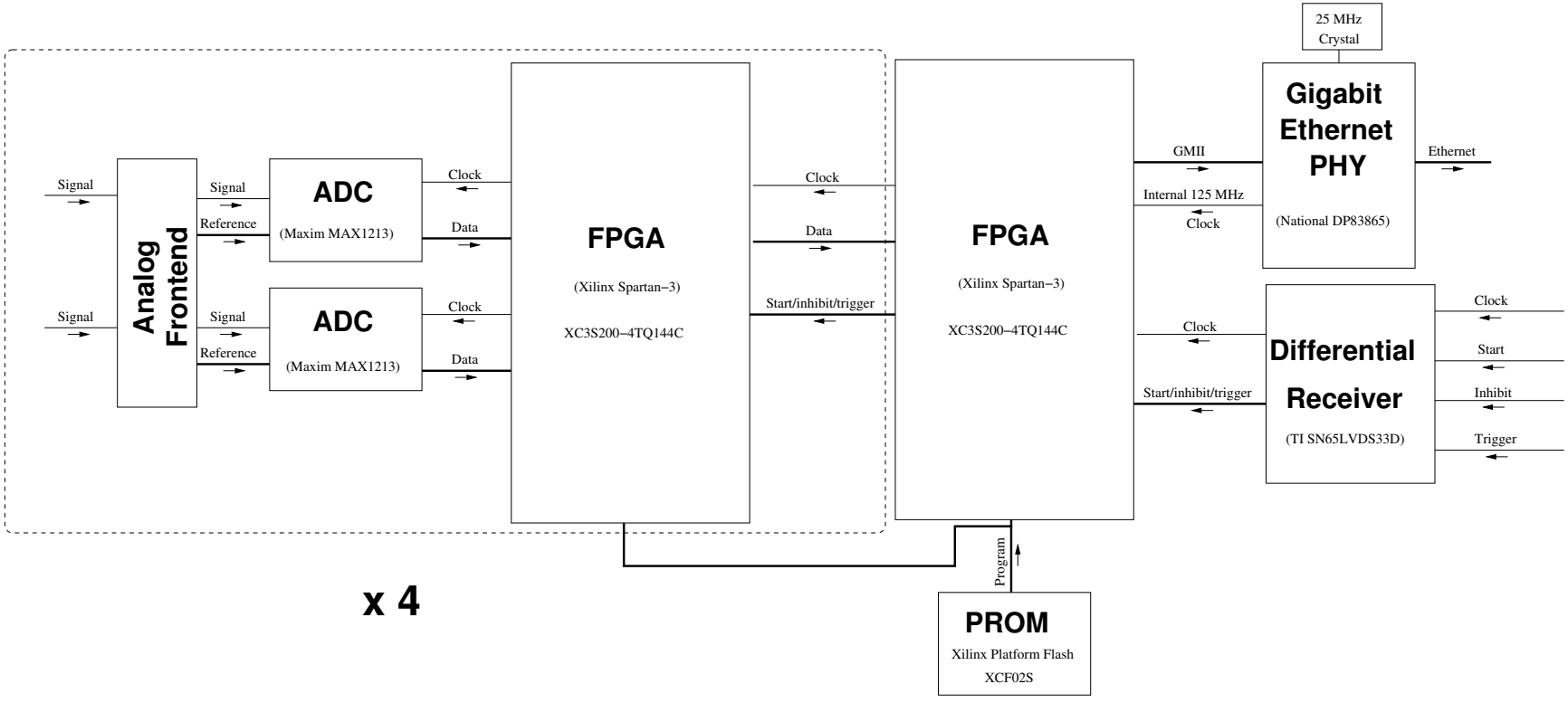
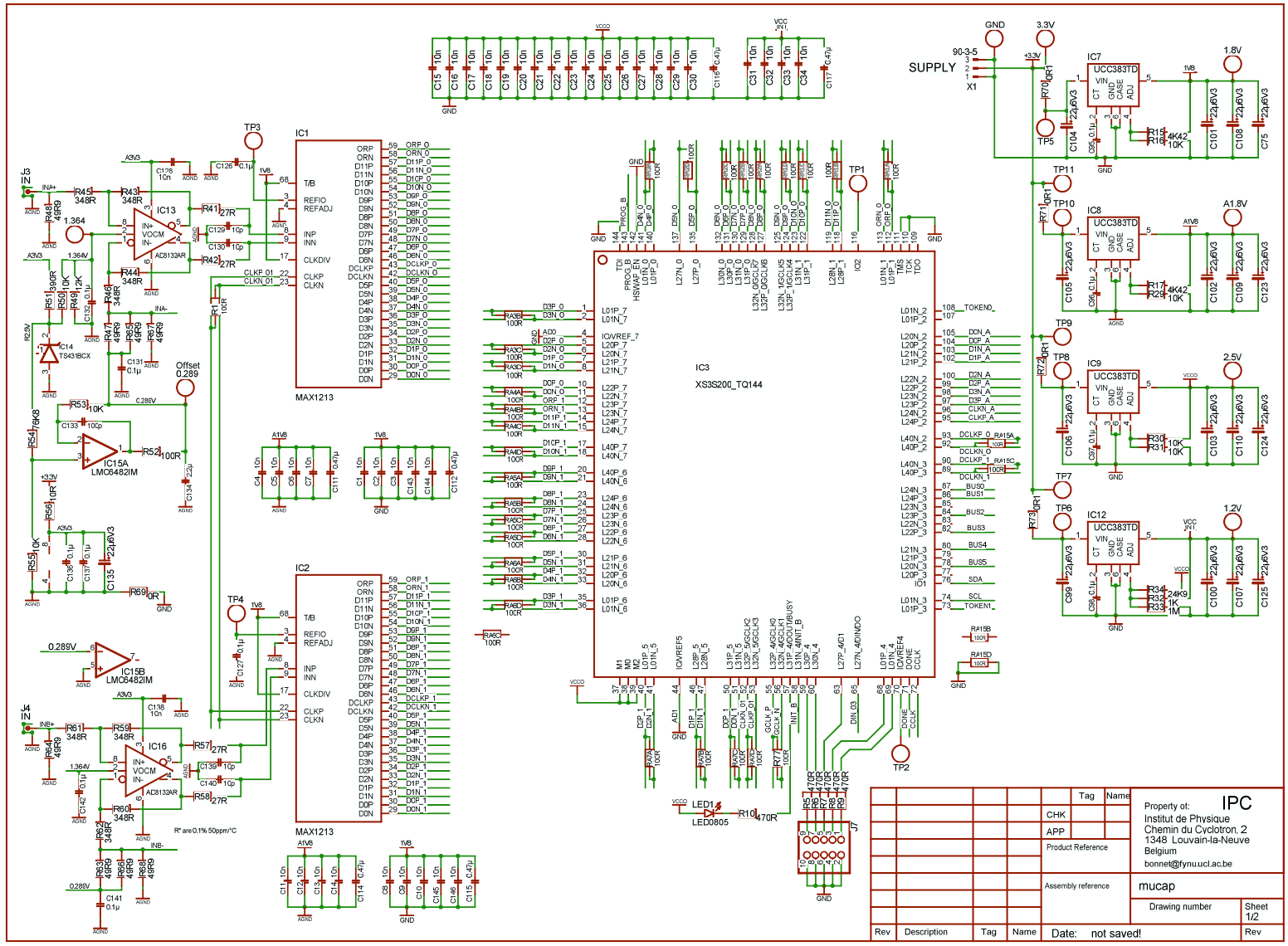
μCap collaboration meeting, Urbana, April 30-May 3, 2005

Design parameters



- Maxim MAX1213: 12-bit, 170 MSPS
- Single-ended or differential input: neutron counters or TPC
- “Self-reading”: direct connection to Gigabit Ethernet

Frontend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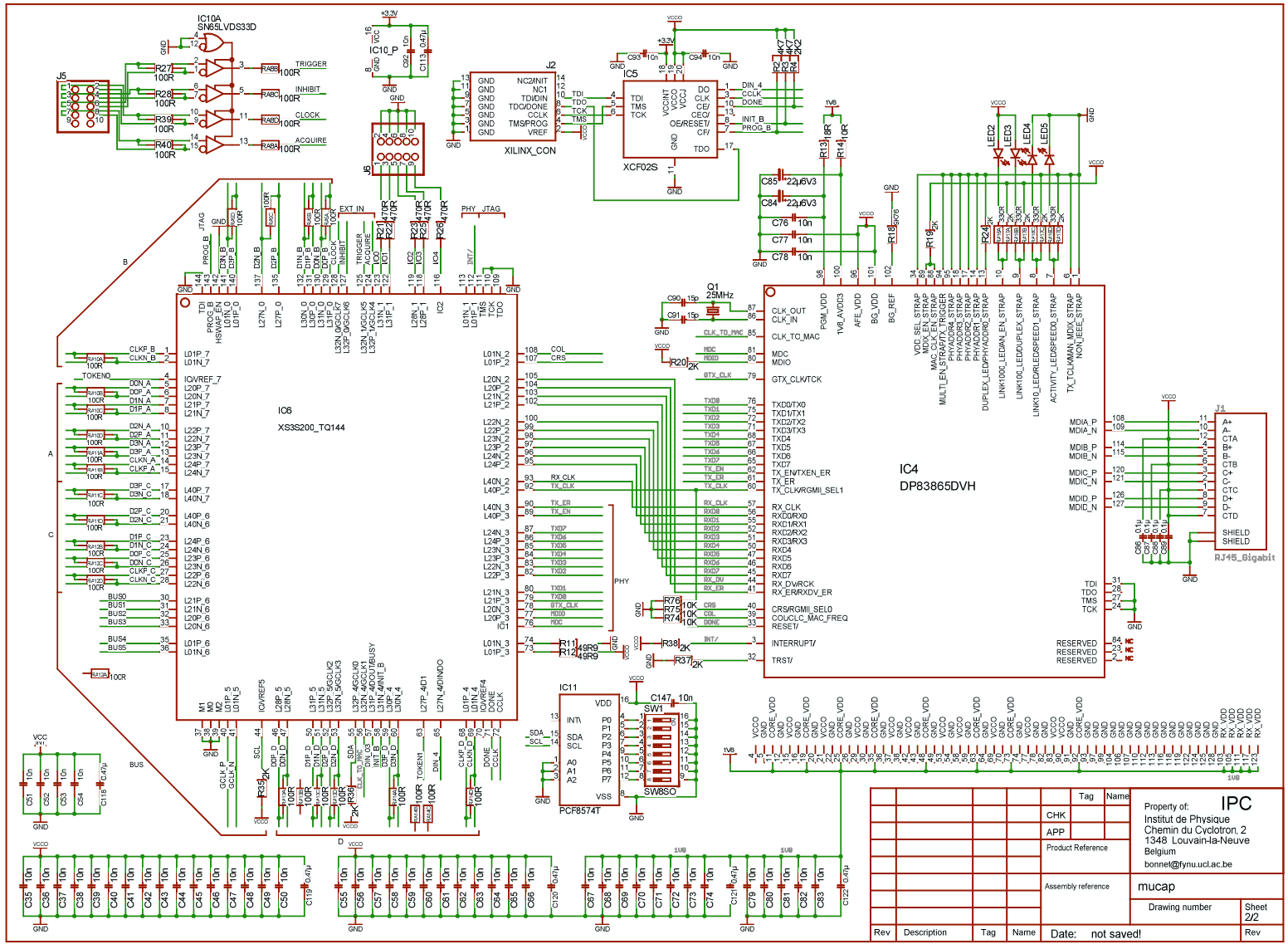
SUPPLY
IC1
MAX1213
IC2
MAX1213
IC3
XS3S200_TQ144
IC7
UCC383TD
IC8
UCC383TD
IC9
UCC383TD
IC12
UCC383TD
IC13
AD8132AR
IC14
TS431BCX
IC15A
LMC6482IM
IC15B
LMC6482IM
IC16
AD8132AR
LED1
LED0805
Property of:
IPC
Institut de Physique
Chemin du Cyclotron, 2
1348 Louvain-la-Neuve
Belgium
bonnet@fynu.ucl.ac.be
mucap
Date: not saved!

Backend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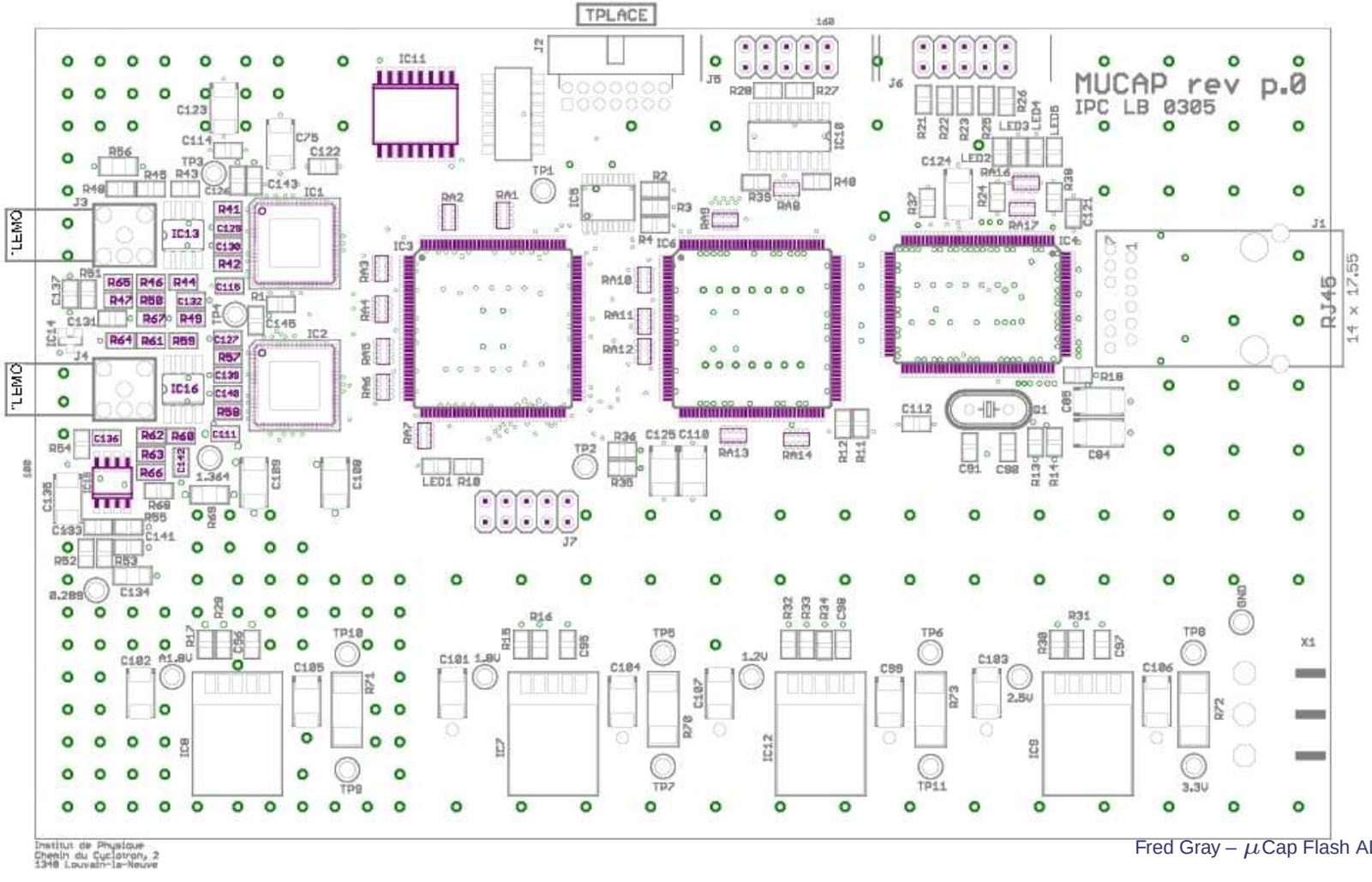
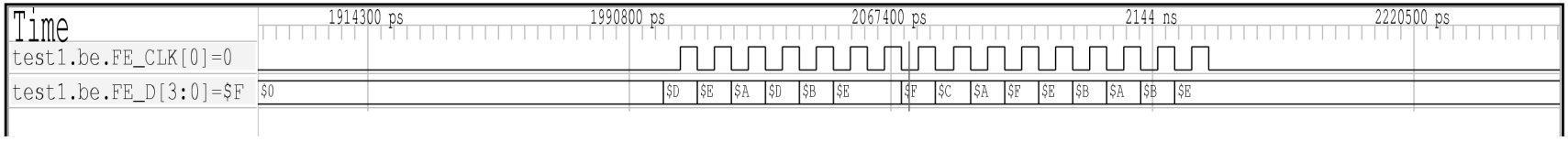
IC6
XS3S200_TQ144
IC4
DP83865DVH
IC5
XCF02S
XILINX_CON
IC10A
SN65LVDS33D
IC10_P
IC11
PCF8574T
Q1
25MHz
J1
RJ45_Gigabit
SW1
SW8SO
LED2
LED3
LED4
LED5
EXT_IN
PHY_JTAG
PHY
BUS
TRIGGER
INHIBIT
CLOCK
ACQUIRE
Property of:
IPC
Institut de Physique
Chemin du Cyclotron. 2
1348 Louvain-la-Neuve
Belgium
bonnet@fynu.ucl.ac.be
CHK
APP
Product Reference
Assembly reference
mucap
Drawing number
Sheet
2/2
Date: not saved!
Tag
Name
Description
Rev

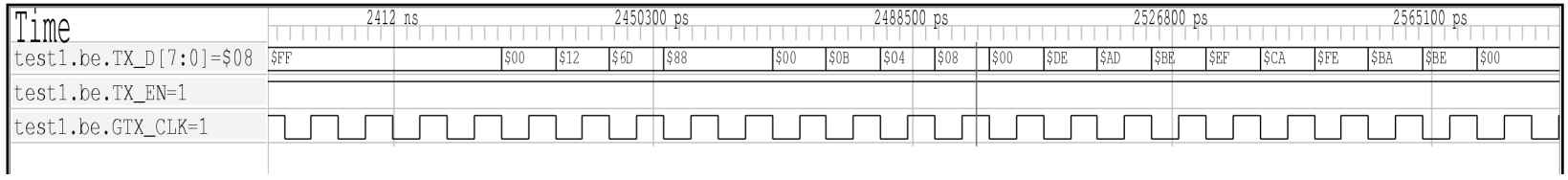
Prototype board layout

- Should be received by René on May 8



Backend firmware





- Data flows from simulated frontend to block RAM and then to gigabit Ethernet.
- Handles simultaneous frontend transmissions.

Remaining firmware tasks

- Frontend
  - Everything
- Backend
  - Receiving management packets from computer
  - i2c interface: address switches, communication with frontends
  - Speed selection: currently gigabit-only