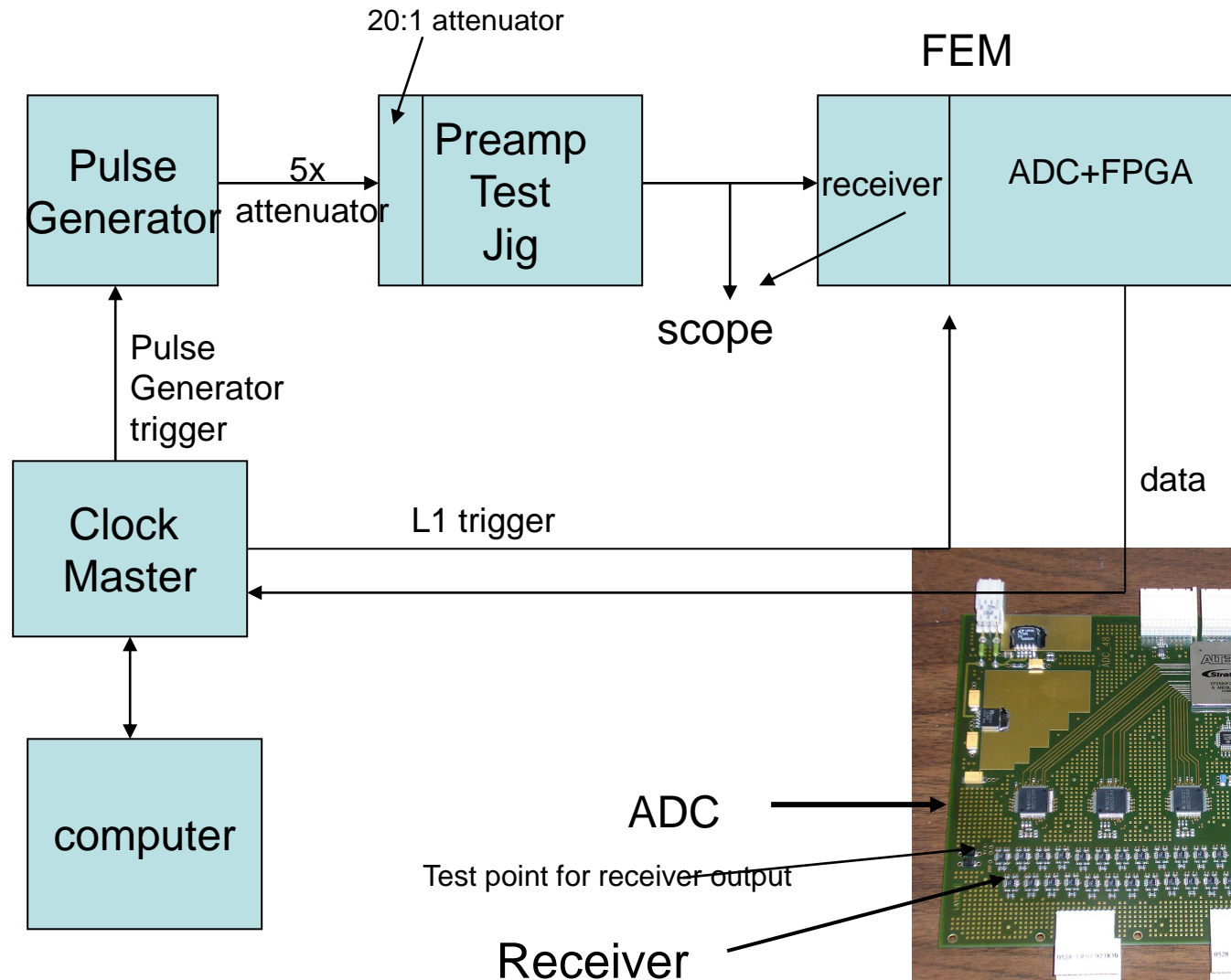


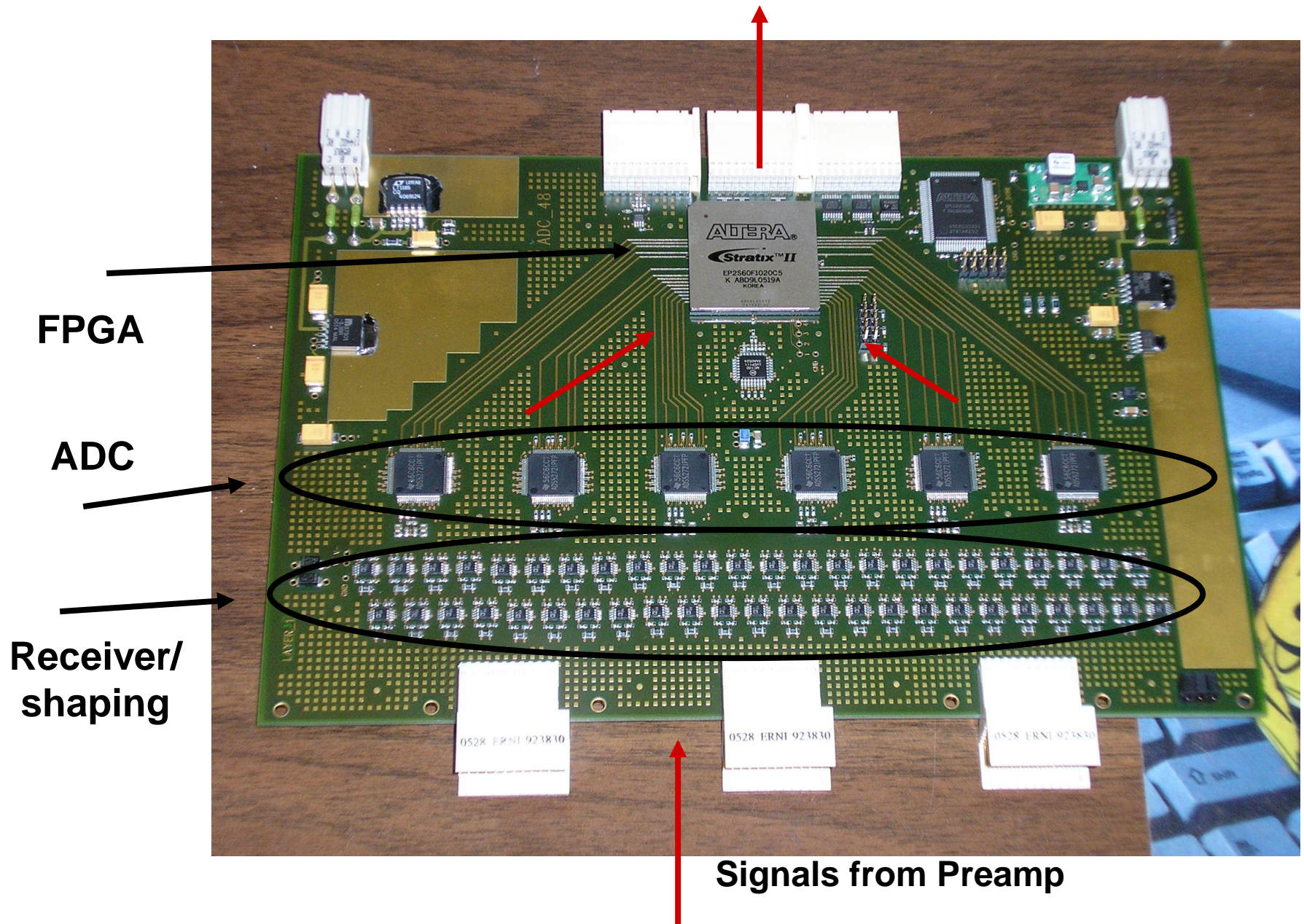
# HBD FEE test result summary + production schedule

- 16mv test pulse result
  - 5X attenuator + 20:1 resistor divider at input
    - (to reduce the noise on the test pulse input)
- Result on the digitized baseline noise
- Large input pulse
- Digital filter
  - A nice, necessary, feature to remove the low frequency noise.
- First look of the production schedule

# FEE testing block diagram



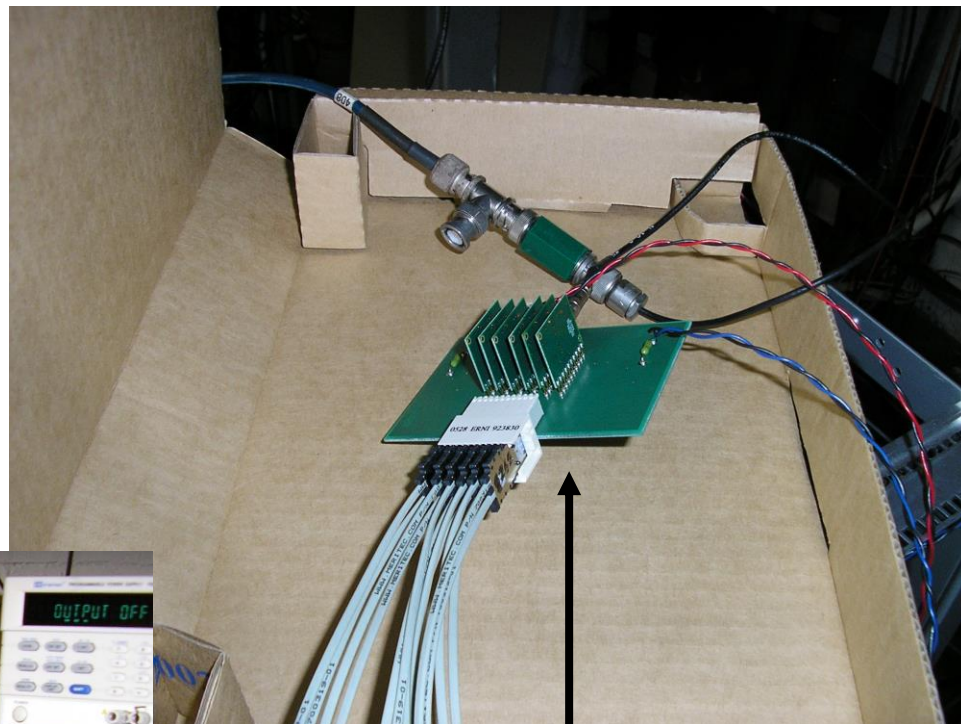
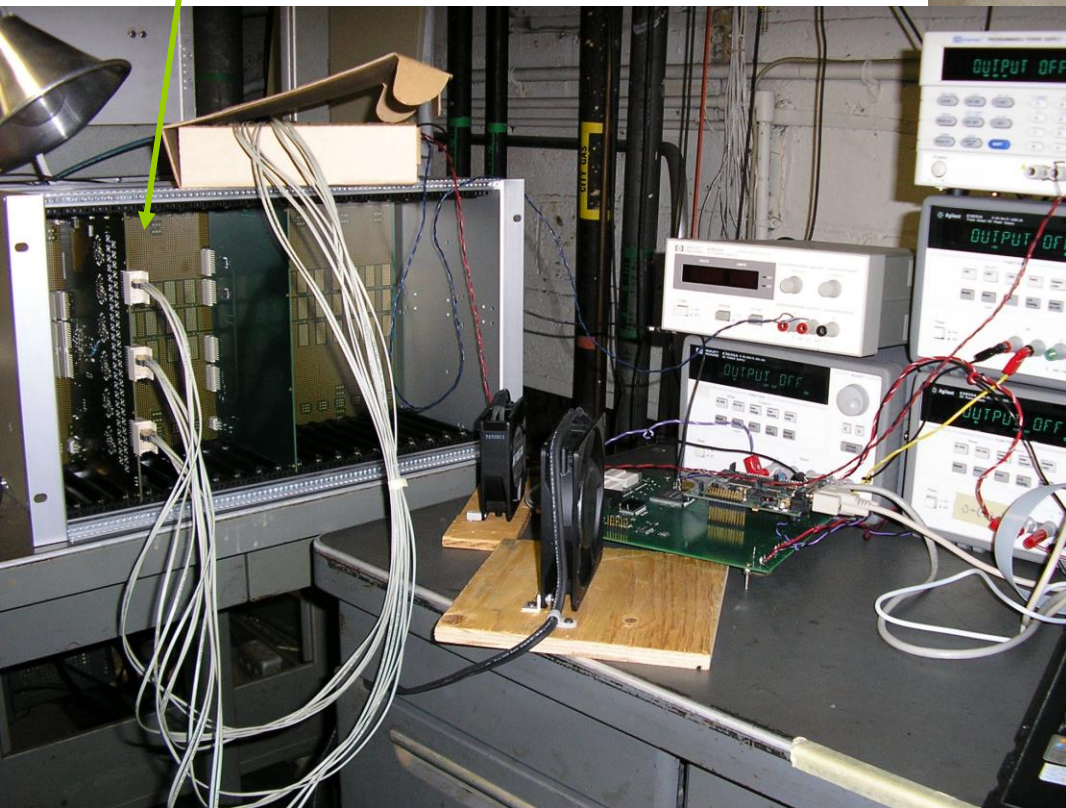
# HBD ADC board





Test stand

ADC module

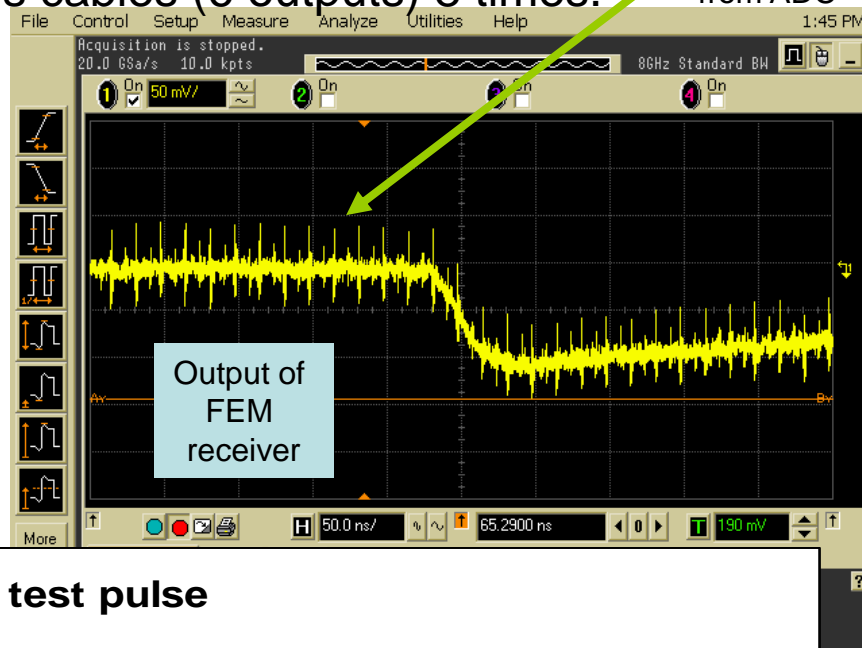
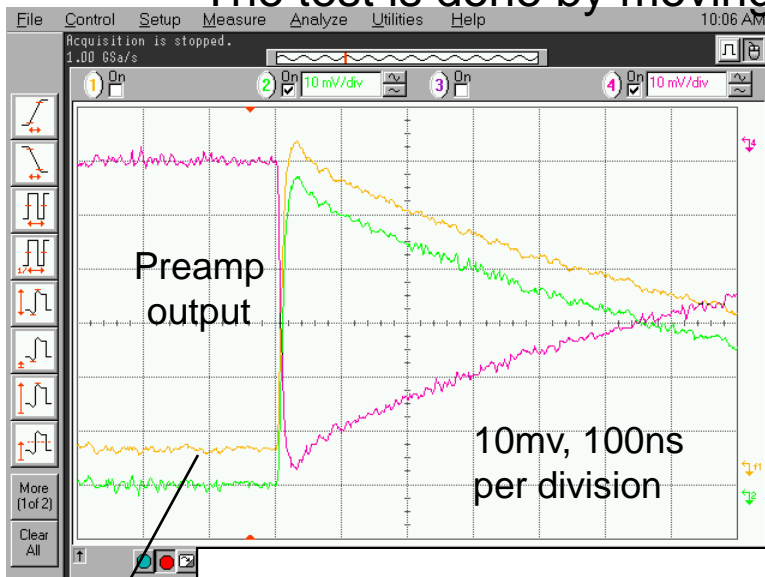


Preamp test jig

16MV test pulse on all the channels on FEM number 2

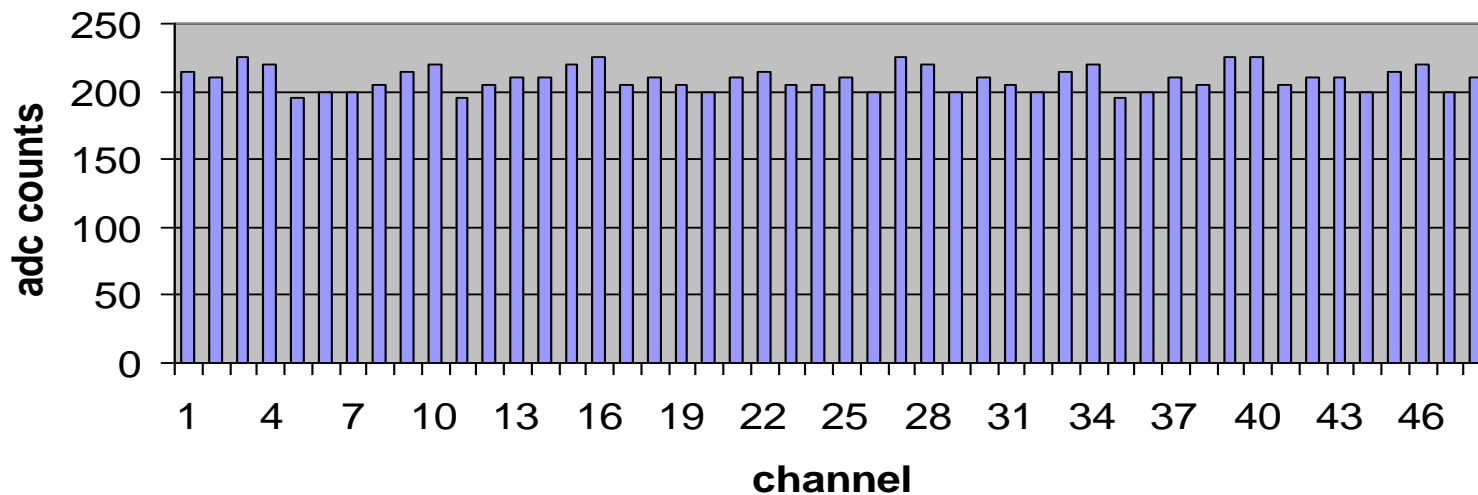
The test is done by moving test jigs cables (6 outputs) 8 times.

60Mhz noise  
kicks back  
from ADC



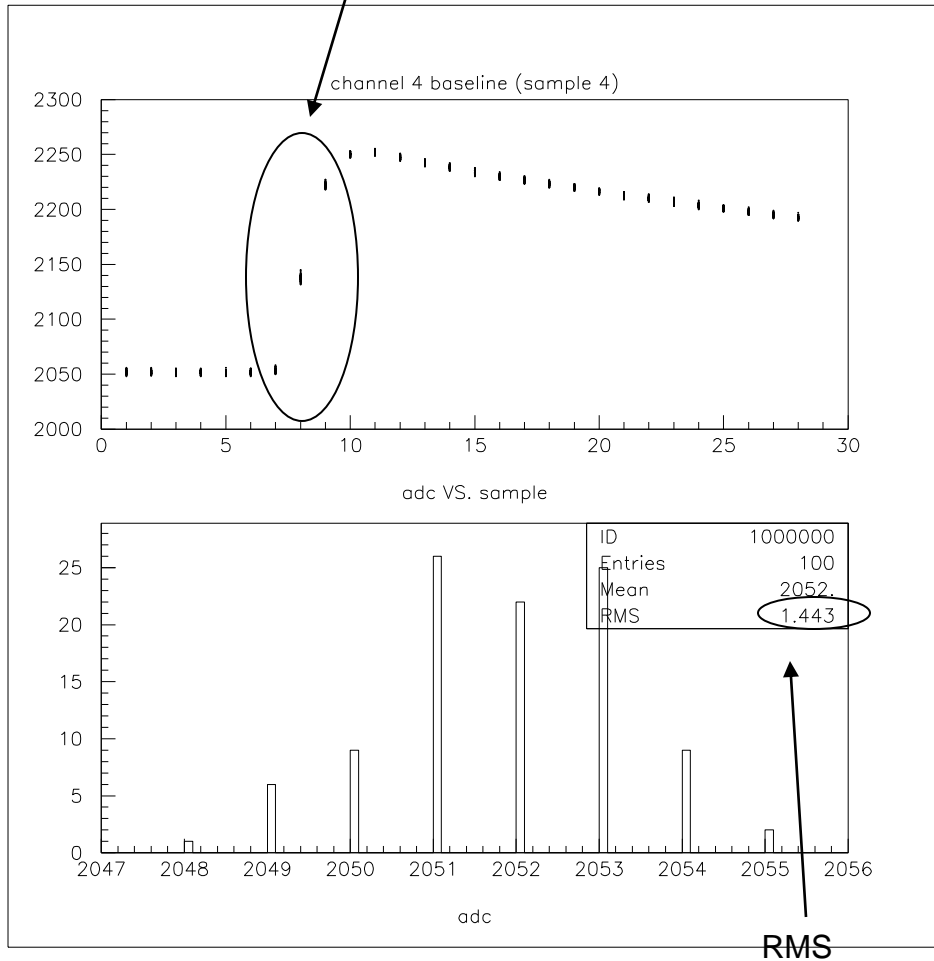
Digital sum  
20mv/division

16mv test pulse

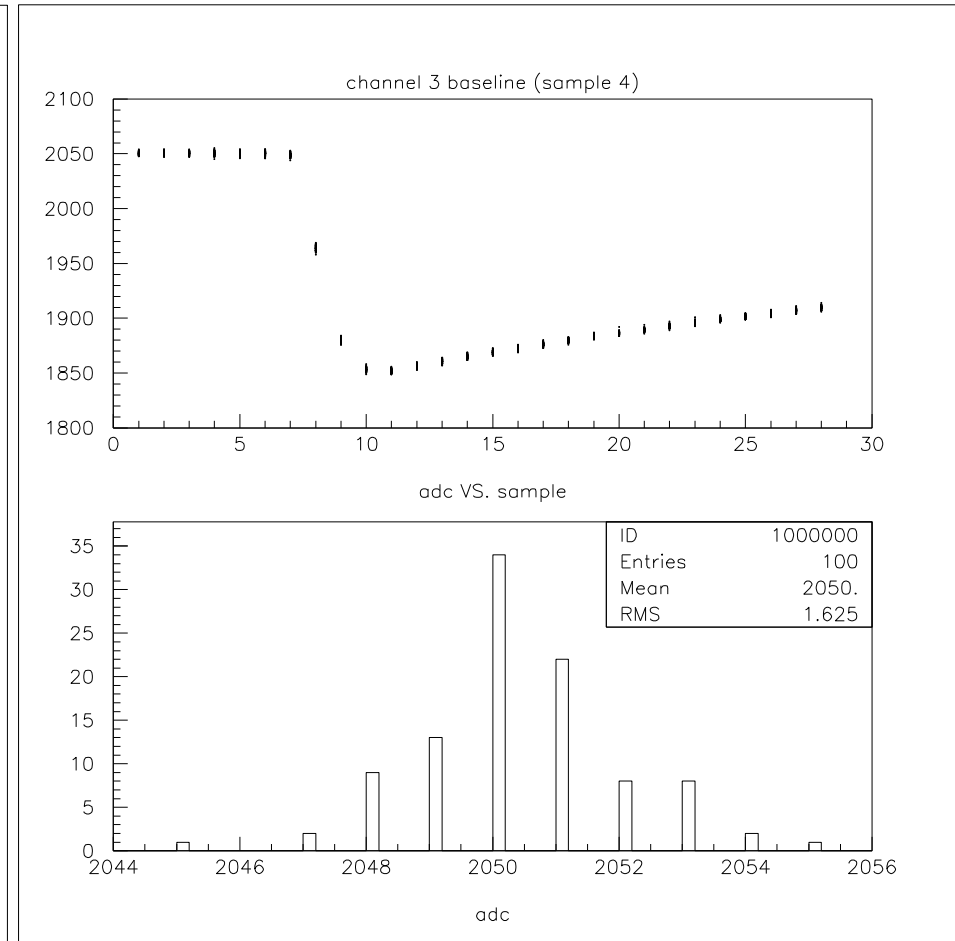


# Digitized 16mv test pulse result

2 samples at rising edge  
1-2 ns time jitter on the test pulse



Reverse the signal cable

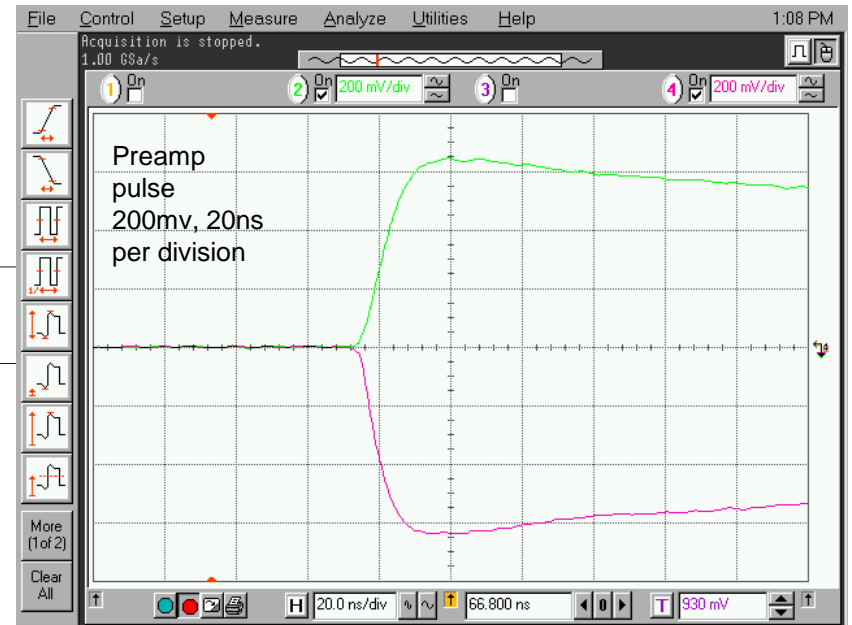
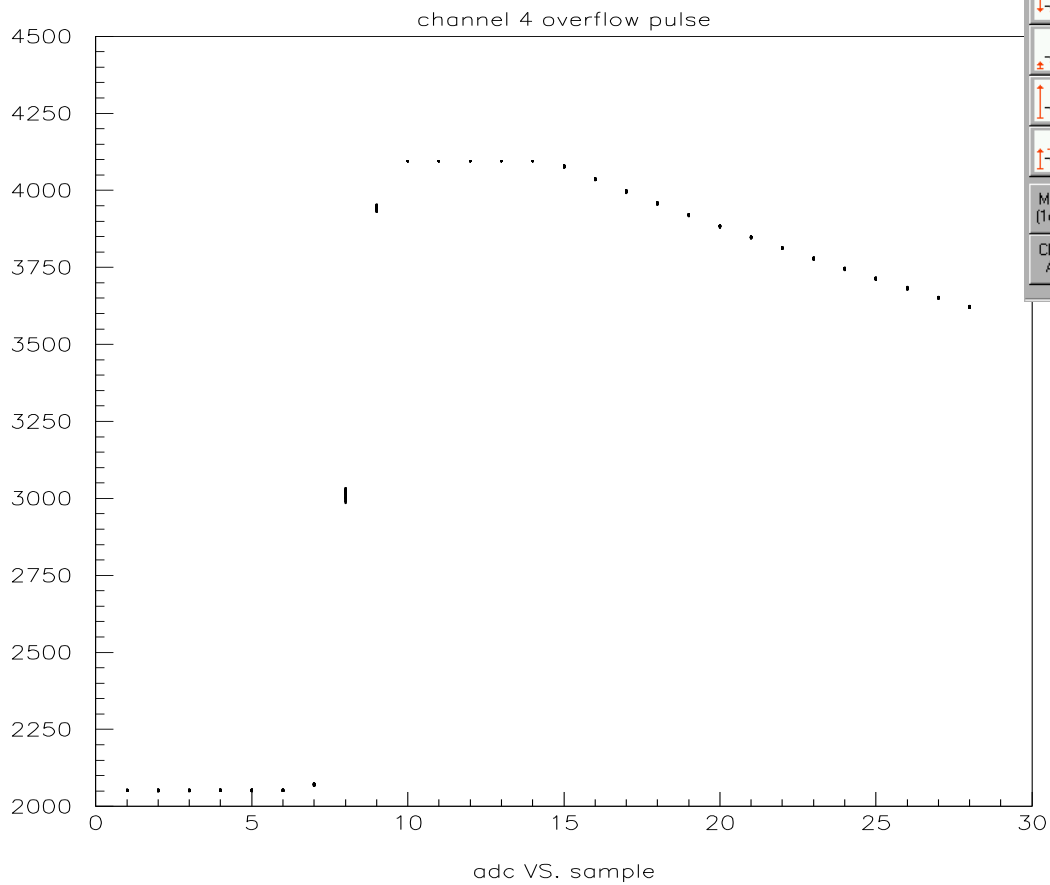


# RMS on the baseline in varies conditions

16mv test pulse generated about 210 ADC counts

condition	RMS ADC distribution on the baseline
Preamp + test jig	1.4 counts
Nothing connected to the FEM	.34 counts
Cable connected to the FEM with two 50ohms termination	.31 counts
cable connected to the test jig with 2 50ohms termination without preamp	.43 counts
Preamp + test jig -- shielded	

# Overflow pulse

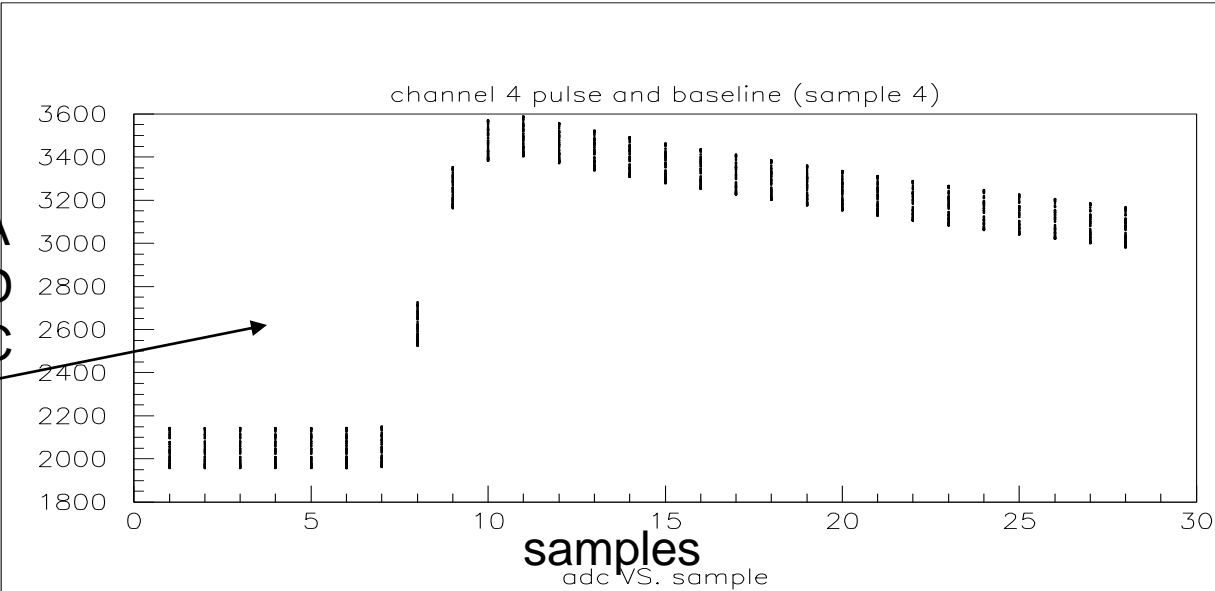




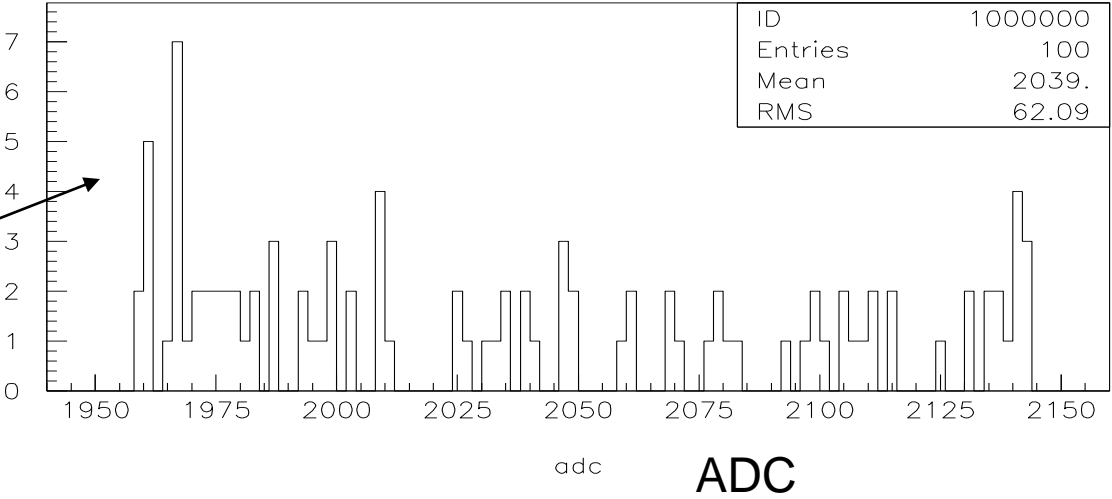
# Preamp pulse seen by channel 4 with noisy power line (100 events)

Digitized result

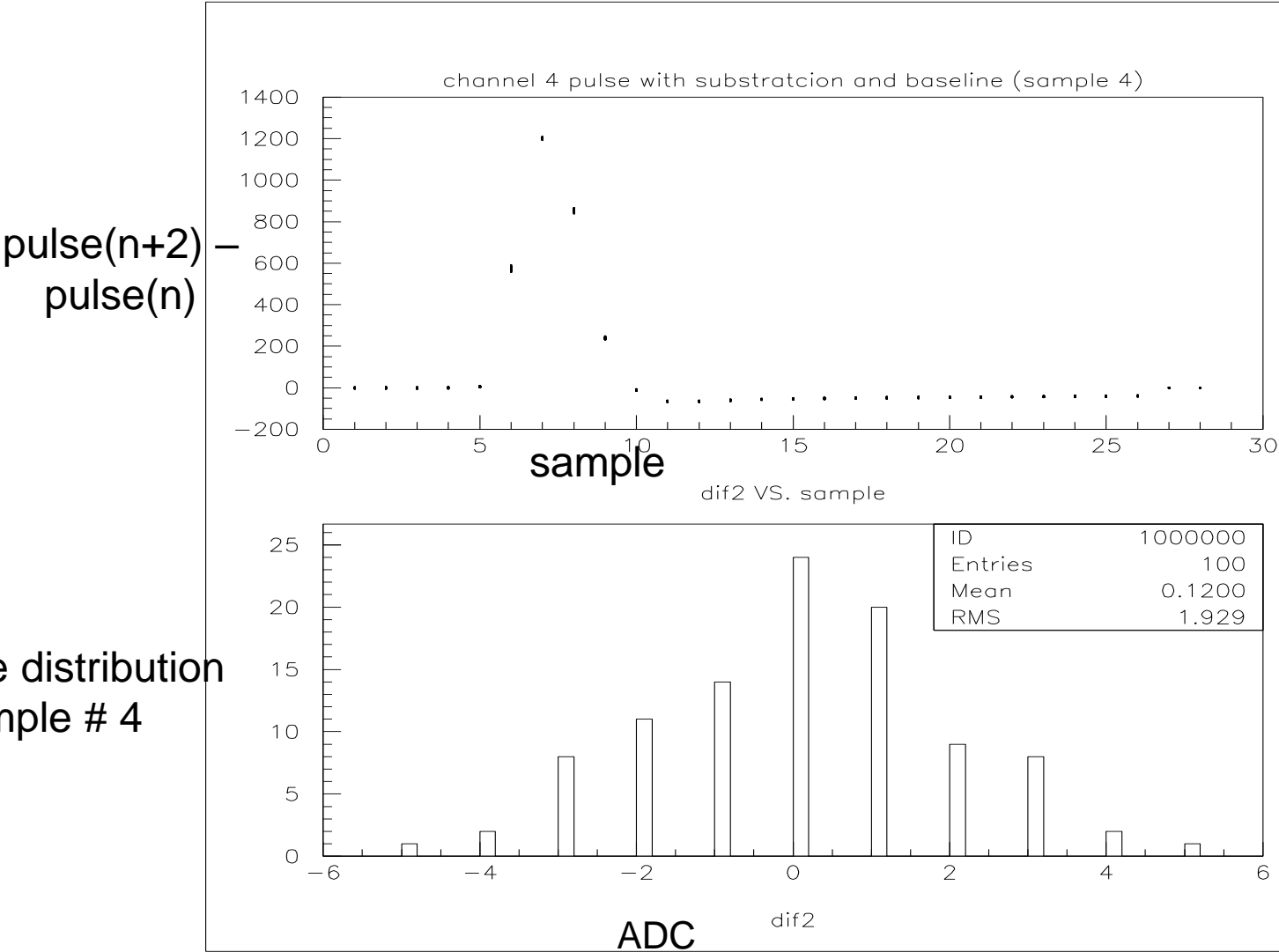
A  
D  
C



Baseline distribution  
Sample # 4



# Digital filtered preamp pulse on channel 4 data with noisy power line (100 events)



# First look at production

- Assume RUN 7 electronics installation in Sept 06.
  - One month contingency → August
- 2 months → PCB production + assembly
  - We only have to build 50 FEMs. This time could be shorten.
  - Schedule final design review on the electronics.
    - chain test with detector
      - To understand ground, gain/shaping time of the FEM etc
      - Once the parts is solder to the PCB, it is final...
- 3 months → parts procurements
  - 1 month to generate P.O. and 2 months to get the parts
- March is the time to buy parts.
  - Once we send out RFQ, we will know how good is the 3 months estimate.
- Risks
  - March is the time to get ready for the RUN 6 test
    - Split manpower and attention