

SAMPA MPW1 tests

# Weekly report

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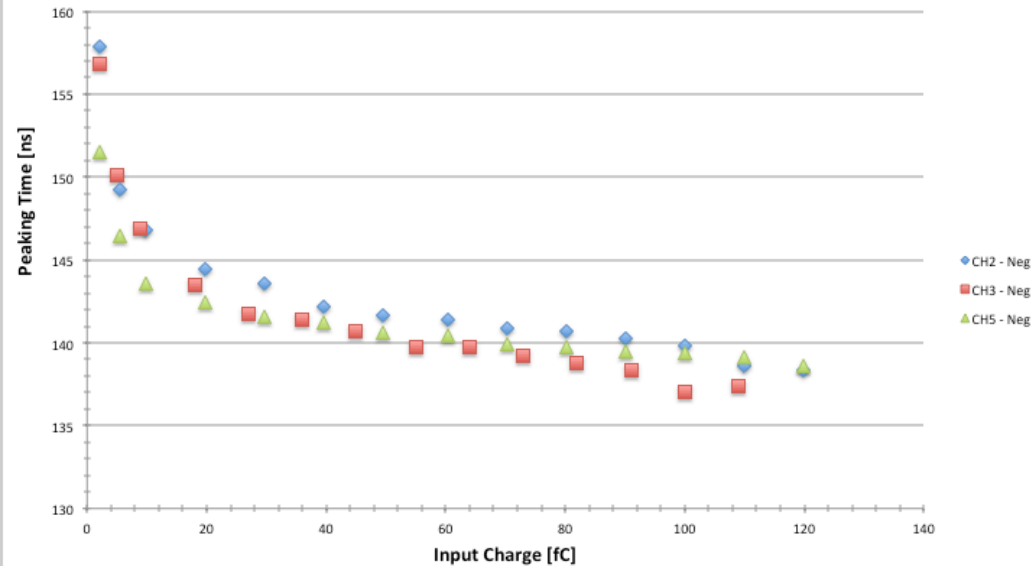


# Measurement Results: MPW1-Chip1-Board 3

- Measurements performed for the 5 configurations:
  - 20mV@160ns NEGATIVE & POSITIVE
  - 30mV@160ns NEGATIVE & POSITIVE
  - 4mV @ 300ns POSITIVE
- Peaking Time vs Input Charge
- Peaking Time vs Detector Capacitance
- ENC vs Capacitance with Bergen's measurement

# 20mV/fC @ 160ns – Peaking Time

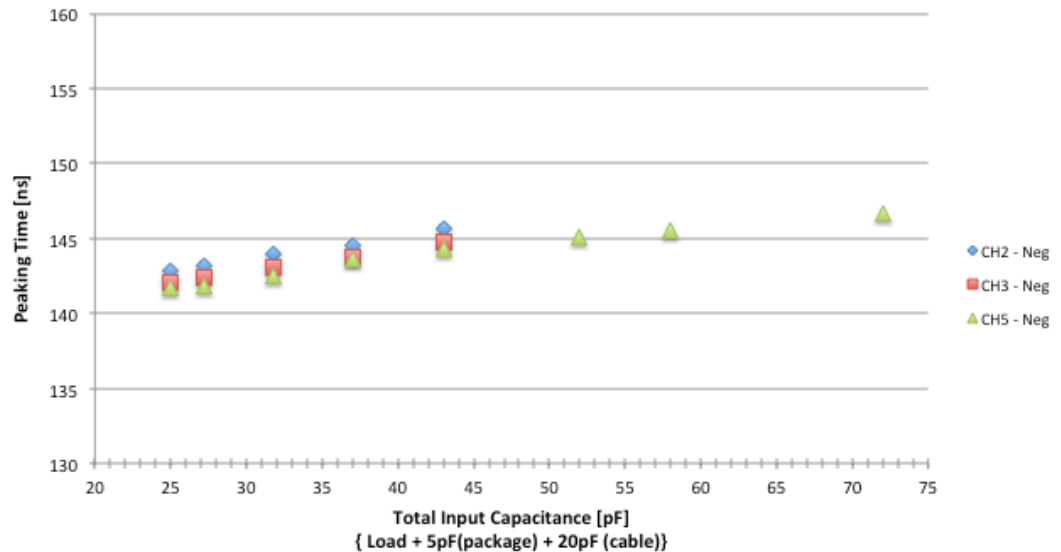
BR3 - 20mV @160ns



- Input Capacitance = 5pF (chip package) + 1ns LEMO Cable (20pF)
- All other channels with a 20pF load
- Error =  $\pm$  sigma of the measurement

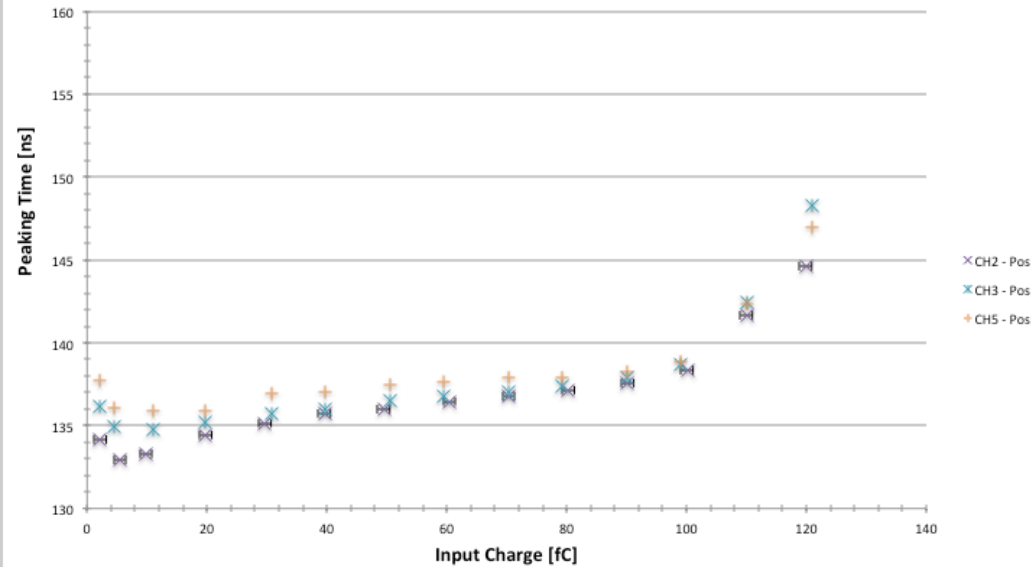
**Input Charge = 50.6fC**

BR3 - 20mV @160ns NEGATIVE



# 20mV/fC @ 160ns – Peaking Time

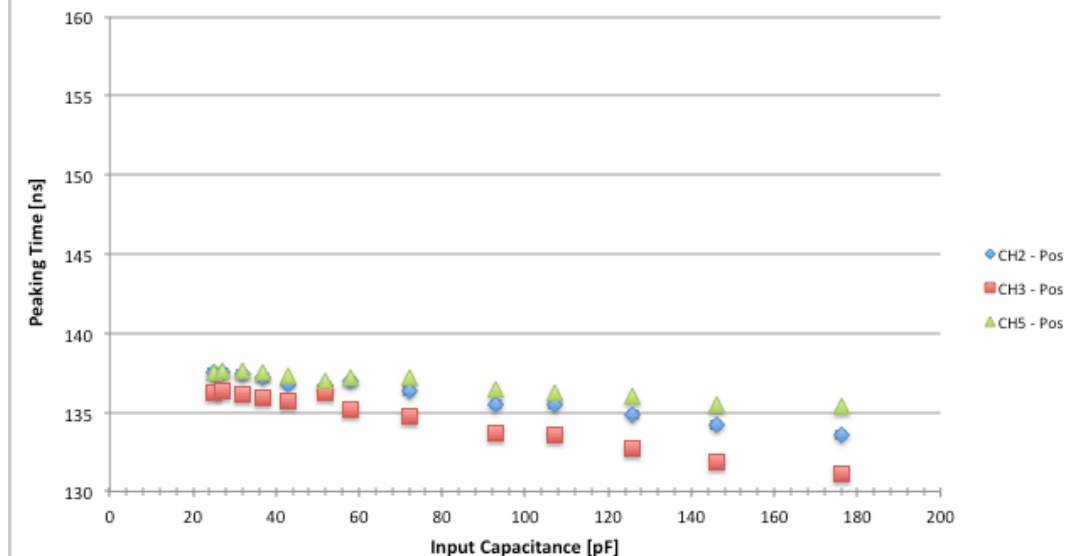
BR3 - 20mV @160ns



- Input Capacitance = 5pF (chip package) + 1ns LEMO Cable (20pF)
- All other channels with a 20pF load
- Error =  $\pm$  sigma of the measurement

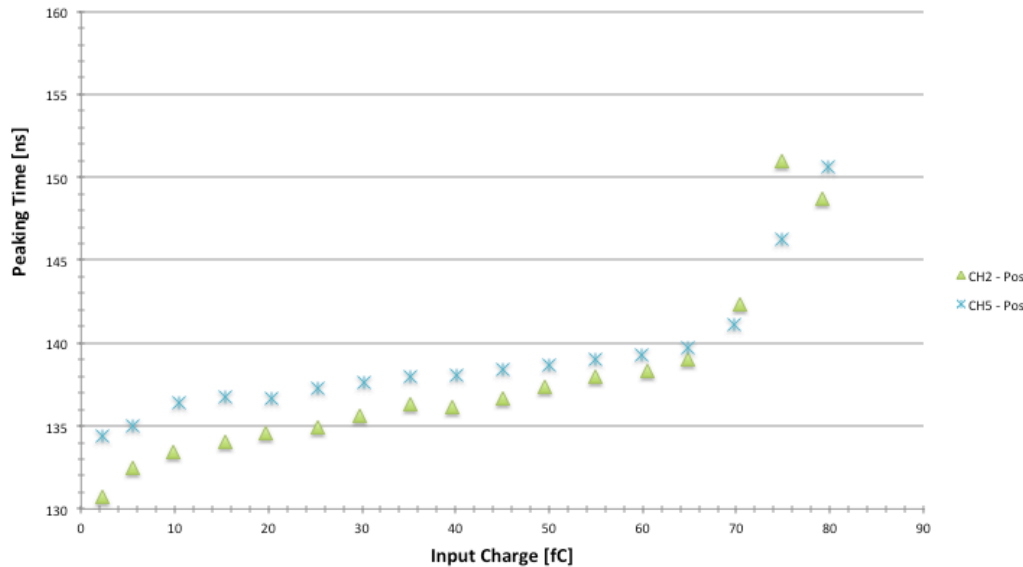
**Input Charge = 50.6fC**

BR3 - 20mV @160ns POSITIVE



# 30mV/fC @ 160ns – Peaking Time

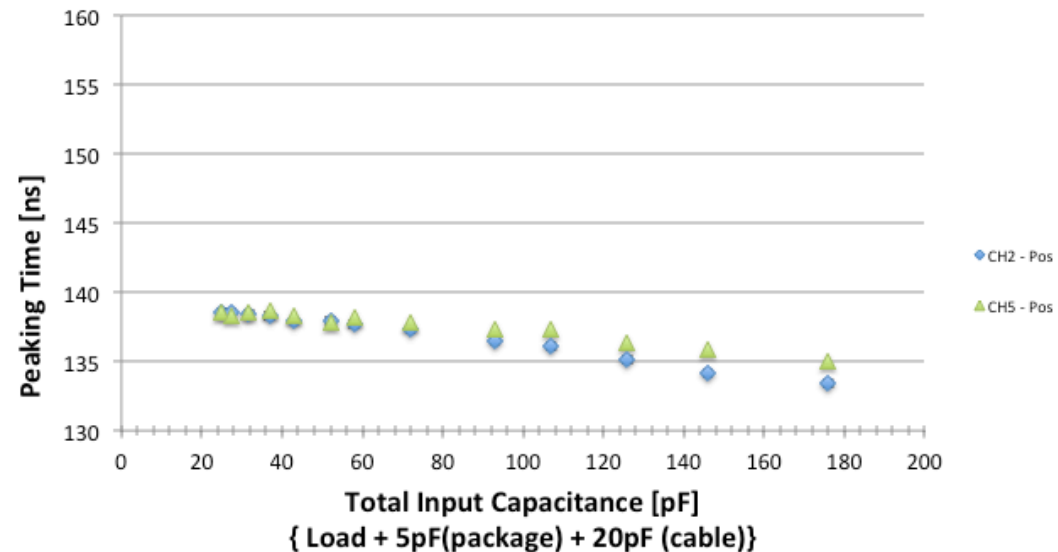
BR3 - 30mV @160ns



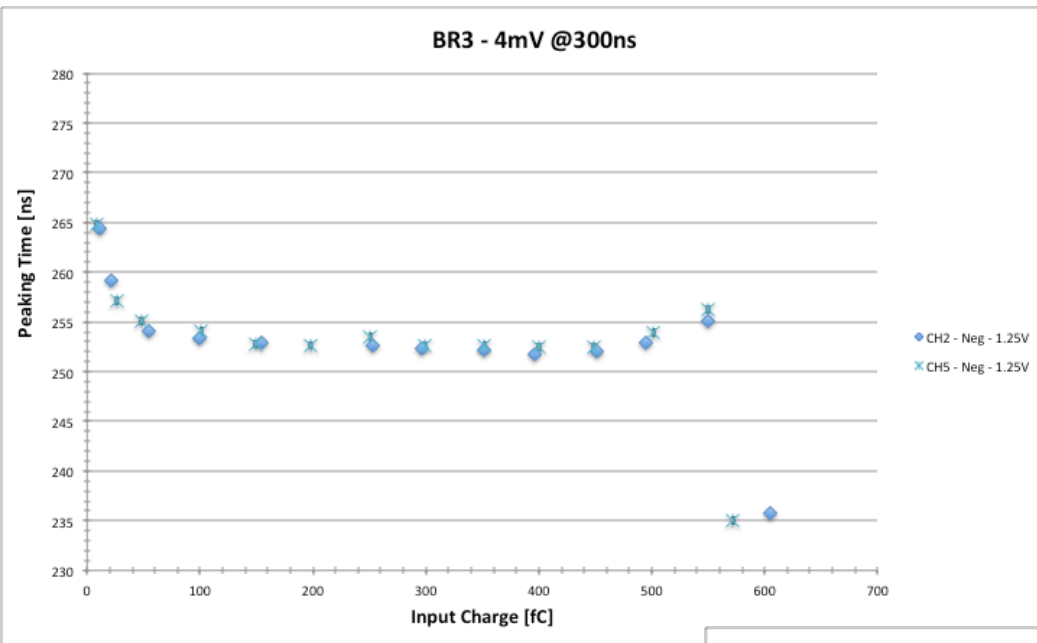
- Input Capacitance = 5pF (chip package) + 1ns LEMO Cable (20pF)
- All other channels with a 20pF load
- Error =  $\pm$  sigma of the measurement

**Input Charge = 50.6fC**

BR3 - 30mV @160ns POSITIVE

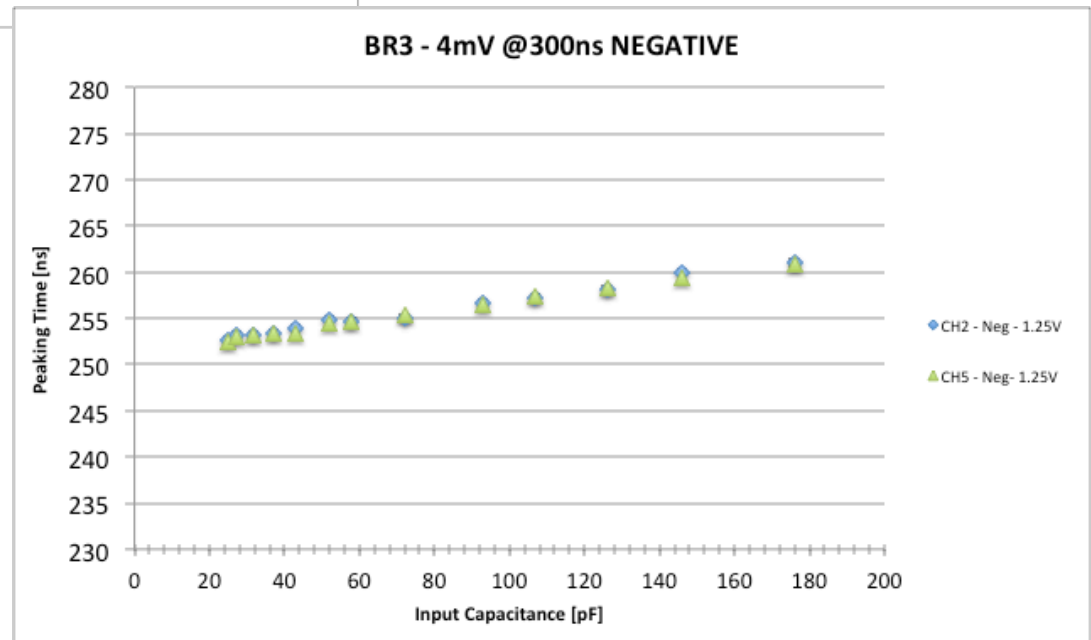


# 4mV/fC @ 300ns – Peaking Time



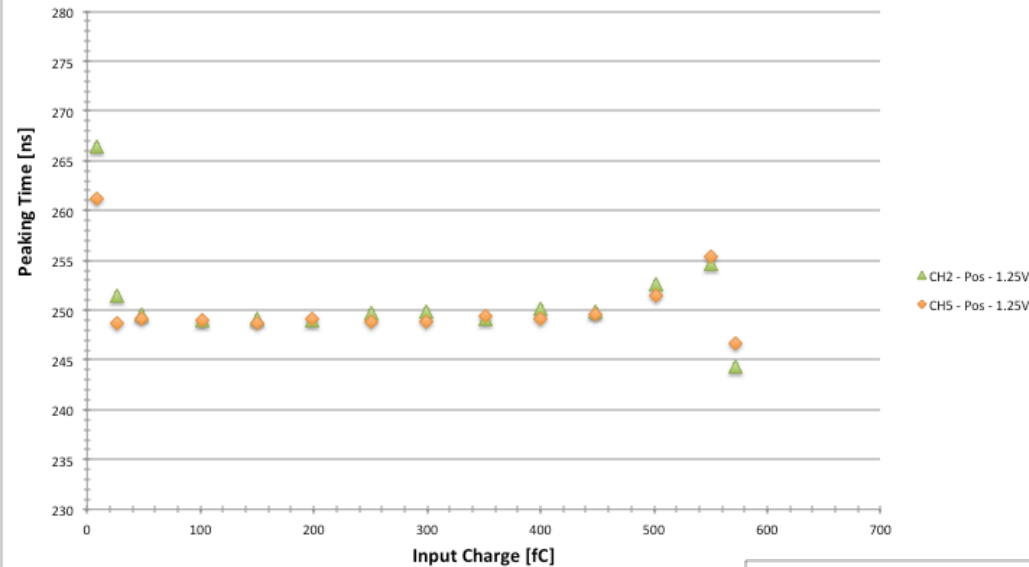
- Input Capacitance = 5pF (chip package) + 1ns LEMO Cable (20pF)
- All other channels with a 20pF load
- Error =  $\pm$  sigma of the measurement

**Input Charge = 300fC**



# 4mV/fC @ 300ns – Peaking Time

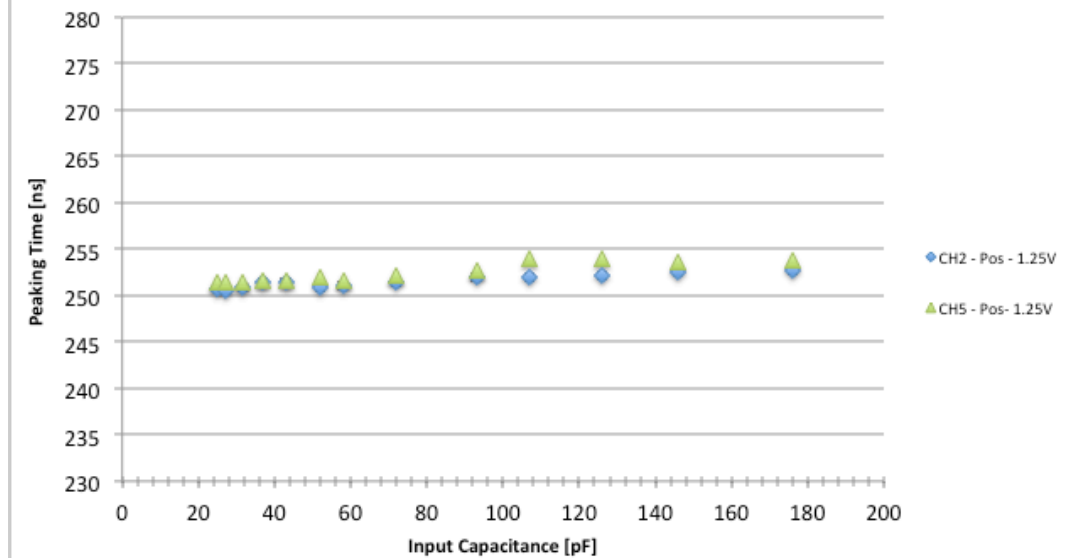
BR3 - 4mV @300ns



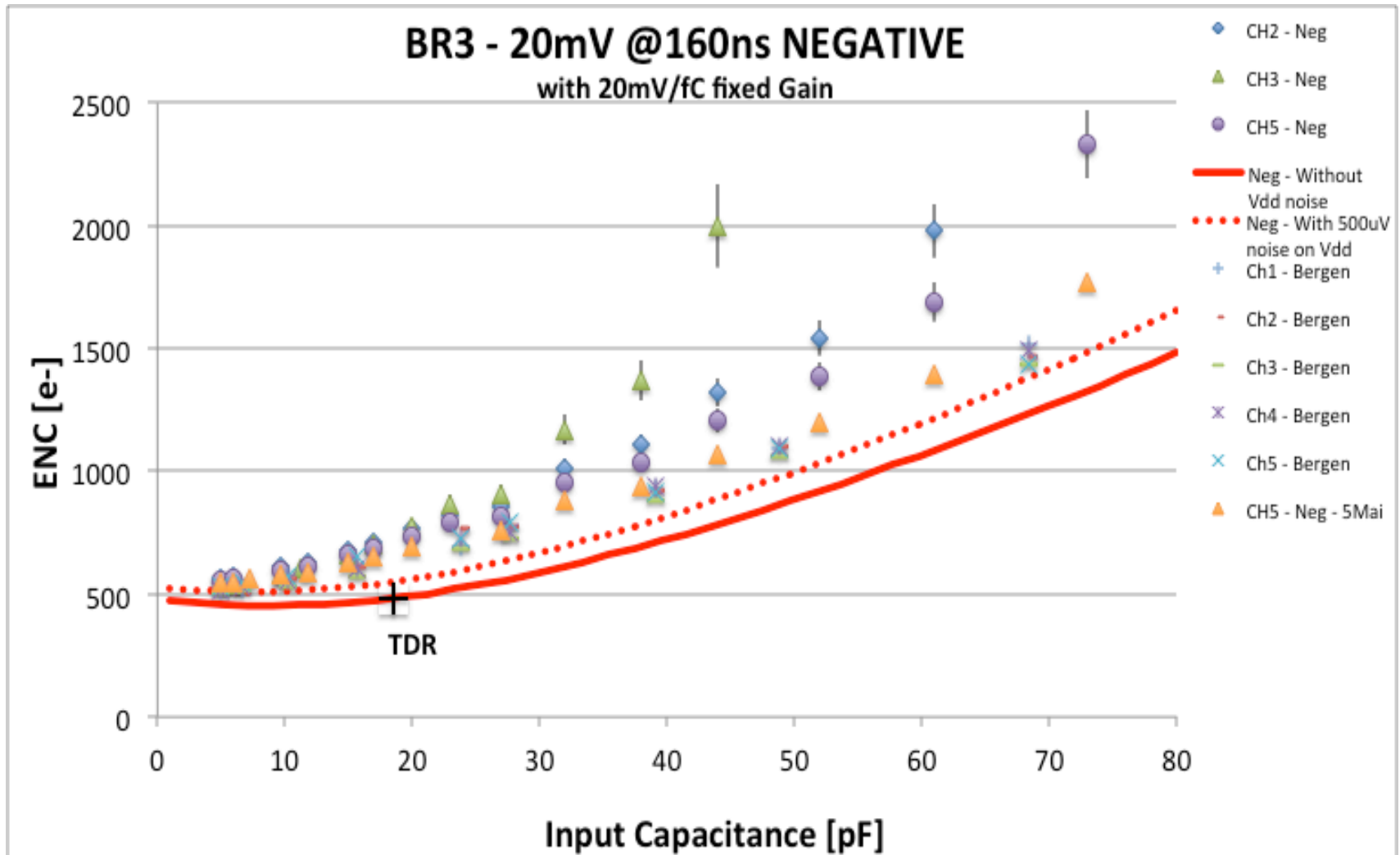
- Input Capacitance = 5pF (chip package) + 1ns LEMO Cable (20pF)
- All other channels with a 20pF load
- Error =  $\pm$  sigma of the measurement

Input Charge = 300fC

BR3 - 4mV @300ns POSITIVE



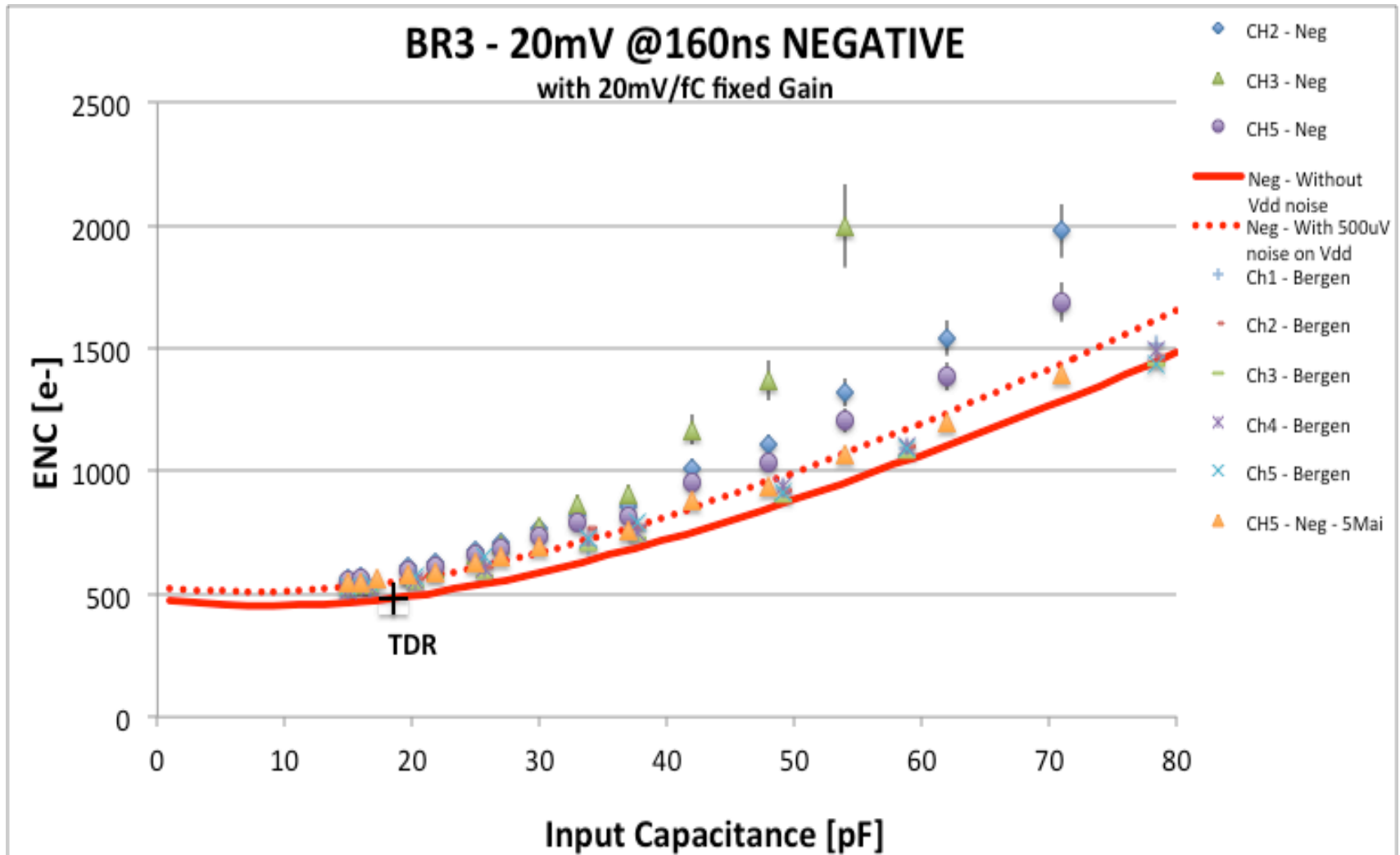
# 20mV/fC @ 160ns – Noise



Considering 5pF (chip package)

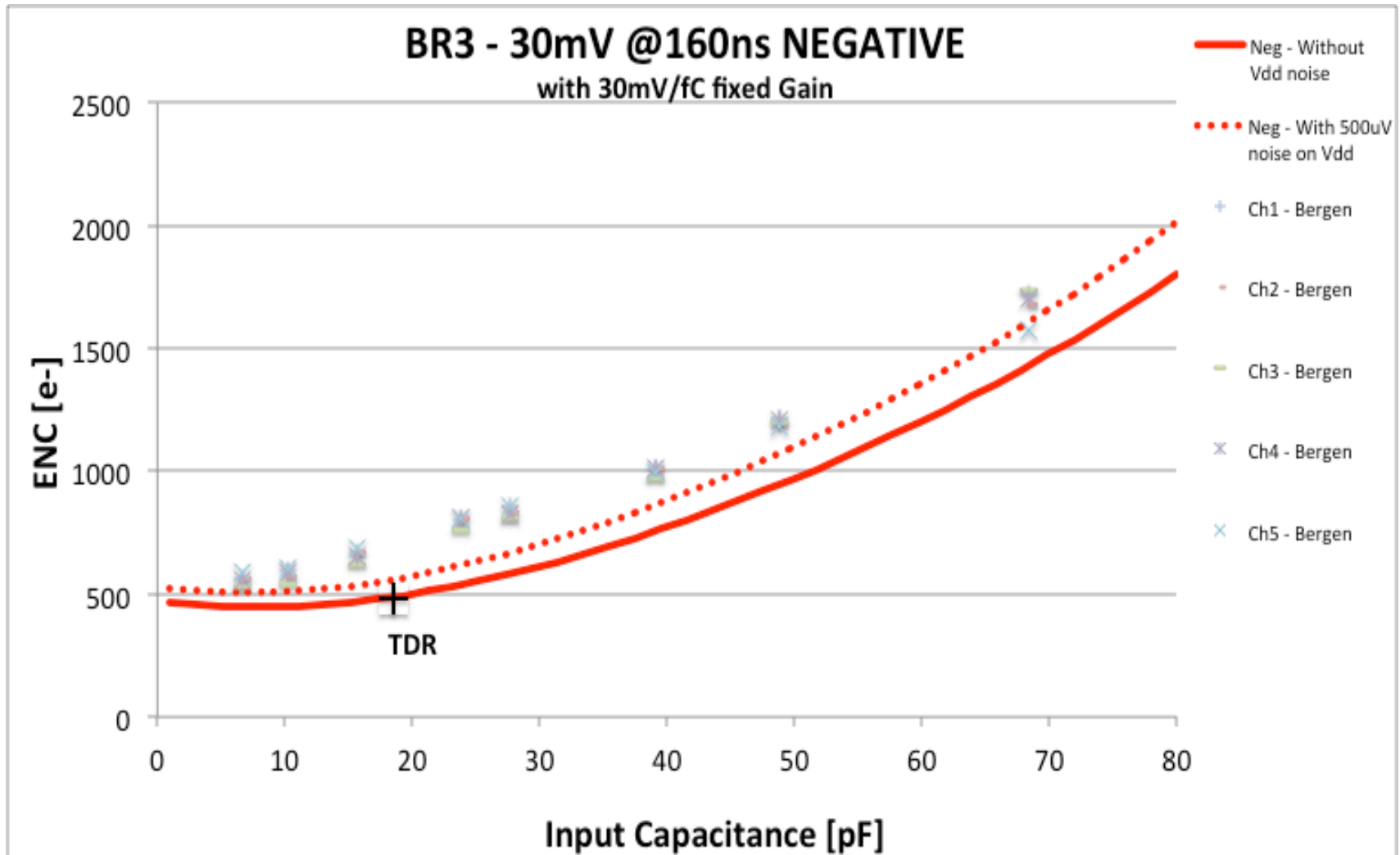


# 20mV/fC @ 160ns – Noise



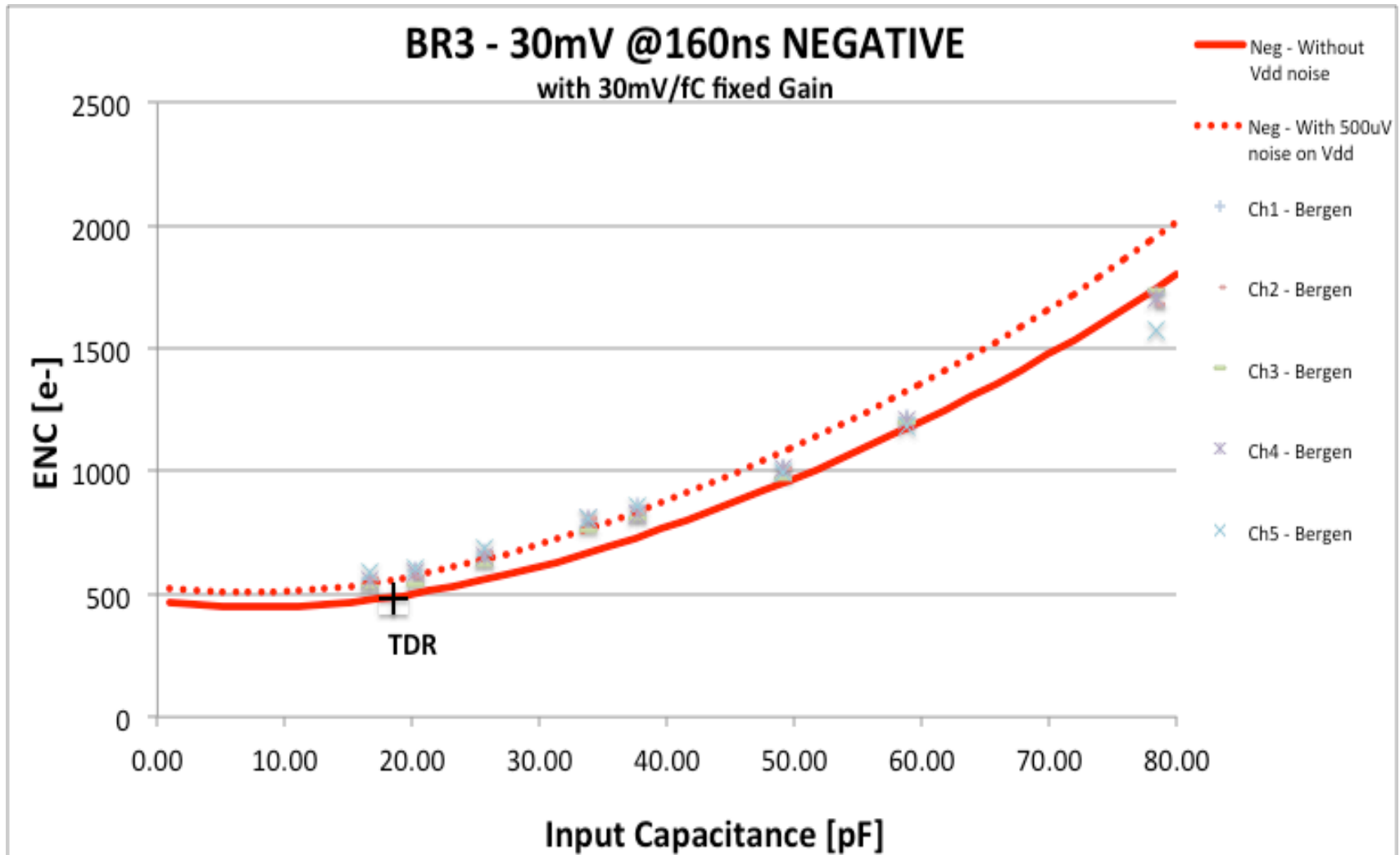
Considering 5pF (chip package) + 10pF (board+ connector)

# 30mV/fC @ 160ns – Noise



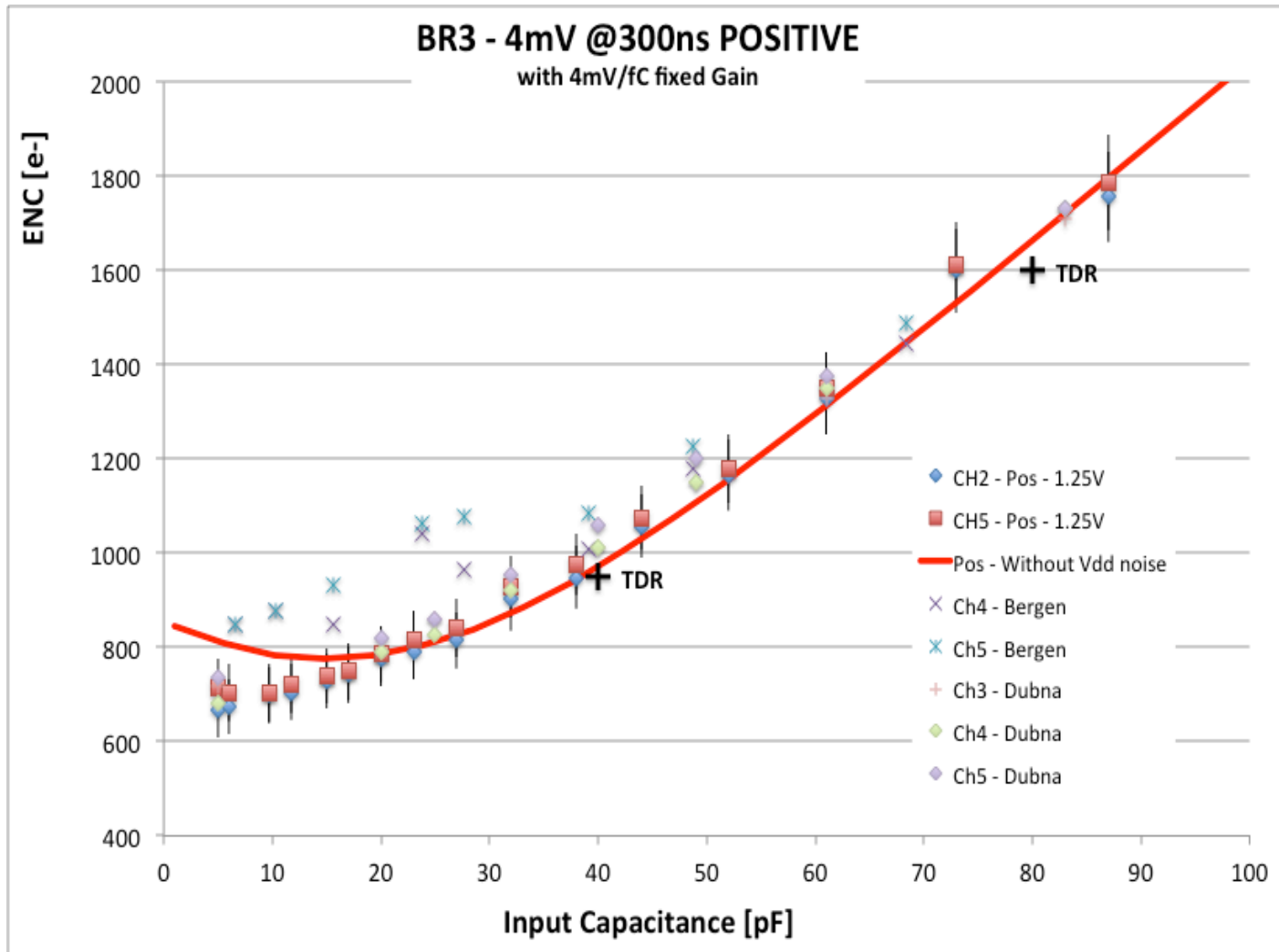
Considering 5pF (chip package)

# 30mV/fC @ 160ns – Noise



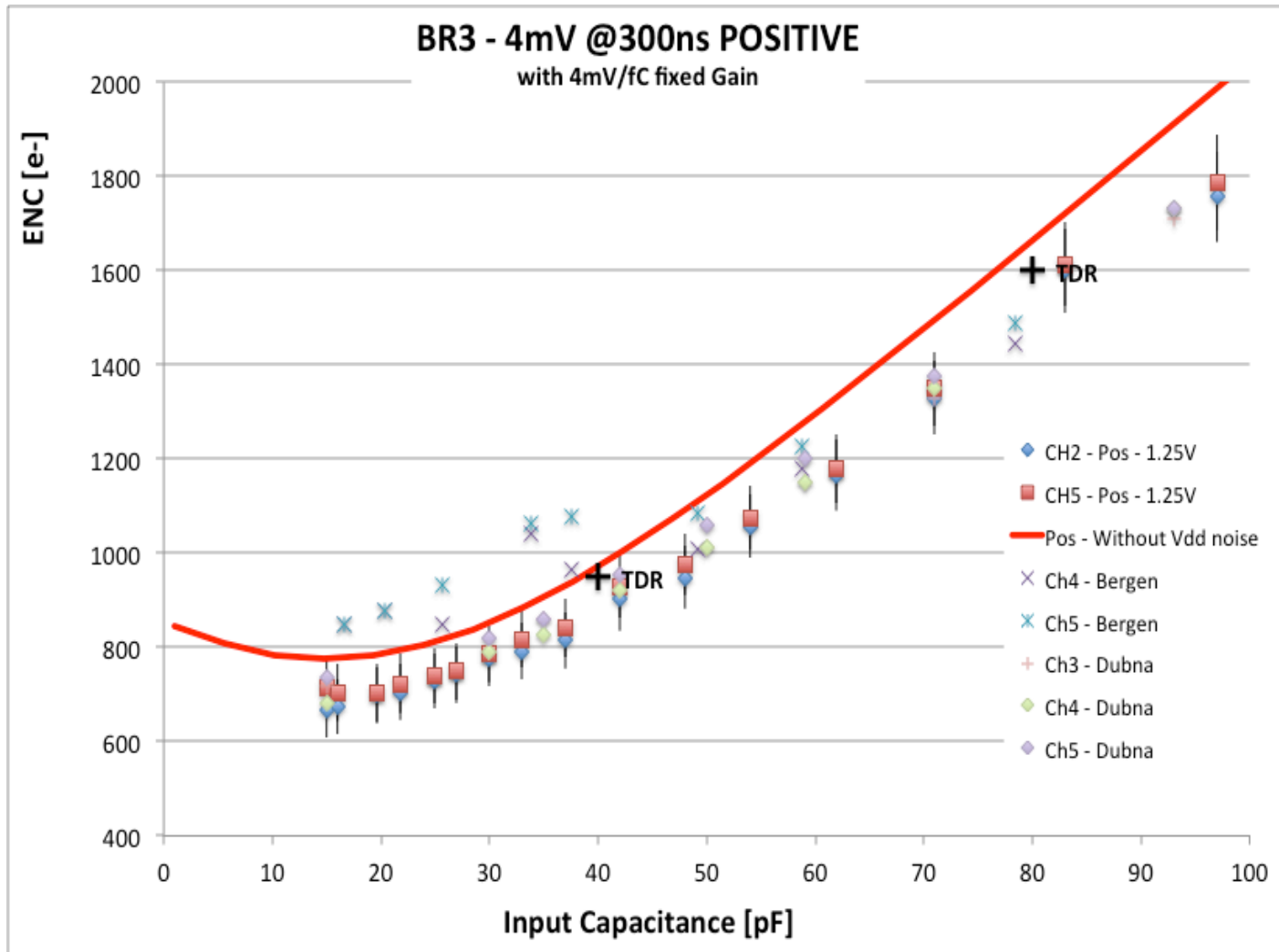
Considering 5pF (chip package) + 10pF (board+ connector)

# 4mV/fC @ 300ns – Noise



Considering 5pF (chip package)

# 4mV/fC @ 300ns – Noise



Considering 5pF (chip package) + 10pF (board+ connector)