

# Eveluation of silicon pad sensors and preamp electronics

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# Introduction

- ◆ FOCAL(FORward CALorimeter)
  - ◆ Compact sampling electromagnetic calorimeter

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◆ FOCAL(FORward CALorimeter)

◆ Compact sampling electromagnetic calorimeter

Compact : deals with large particle flux at forward

# Introduction

## ◆ FOCAL(FORward CALorimeter)

◆ Compact **sampling** electromagnetic calorimeter

**Sampling** : observes part of the energy deposited by particle **for the optimized shower**

# Introduction

## ◆ FOCAL(FORward CALorimeter)

- ◆ Compact sampling **electromagnetic** calorimeter

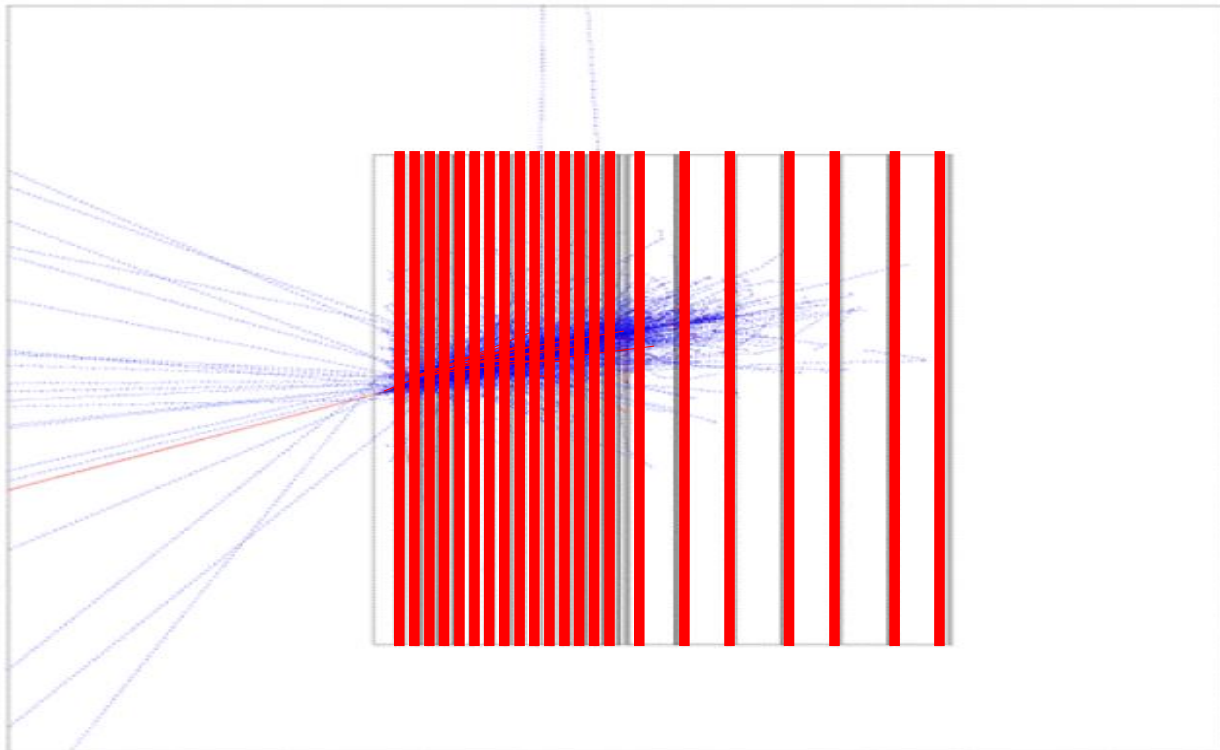
**Electromagnetic** : measures key particles

(**e**,  **$\gamma$**  and  **$\pi^0$** ) **within small space**

# Introduction

- ◆ FOCAL(FORward CALorimeter)
  - ◆ Compact sampling electromagnetic calorimeter
  - Calorimeter : measures energy.

# Scope of efforts (I)



Most electrons passing a given sensor layer are so called "MIP". In other words they deposit minimum ionization energy just like cosmic muons. Therefore we want to test sensors with cosmic muons.

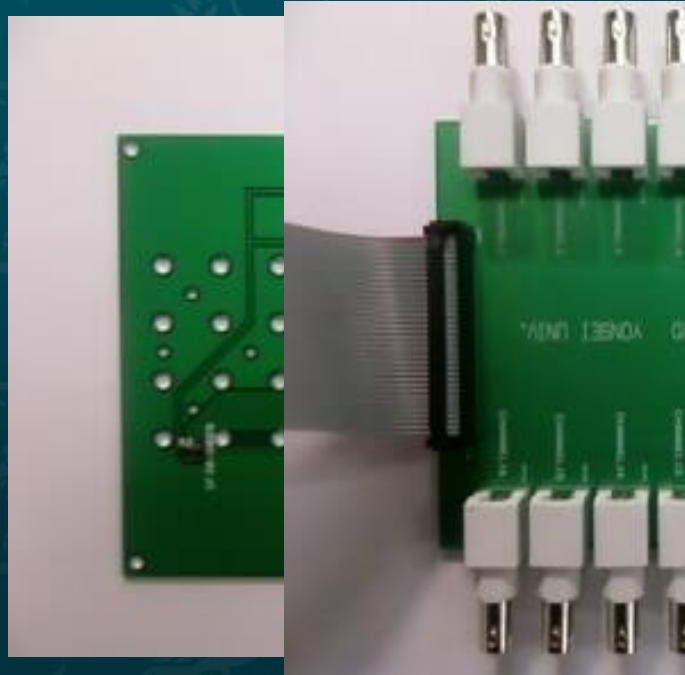
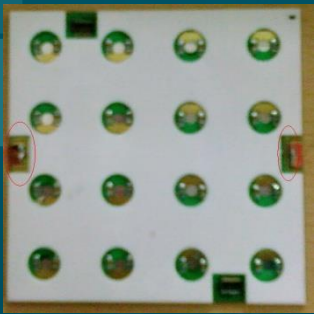


# Scope of efforts (II)

- ◆ Cosmic test requires setup of test electronics including preamps which Korean groups consider mass production of. We plan to test preamp models utilizing the test setup.

# Evaluation

- ◆ Cosmic muon test
  - ◆ Sensors are currently in production and we will show prepared test electronics.

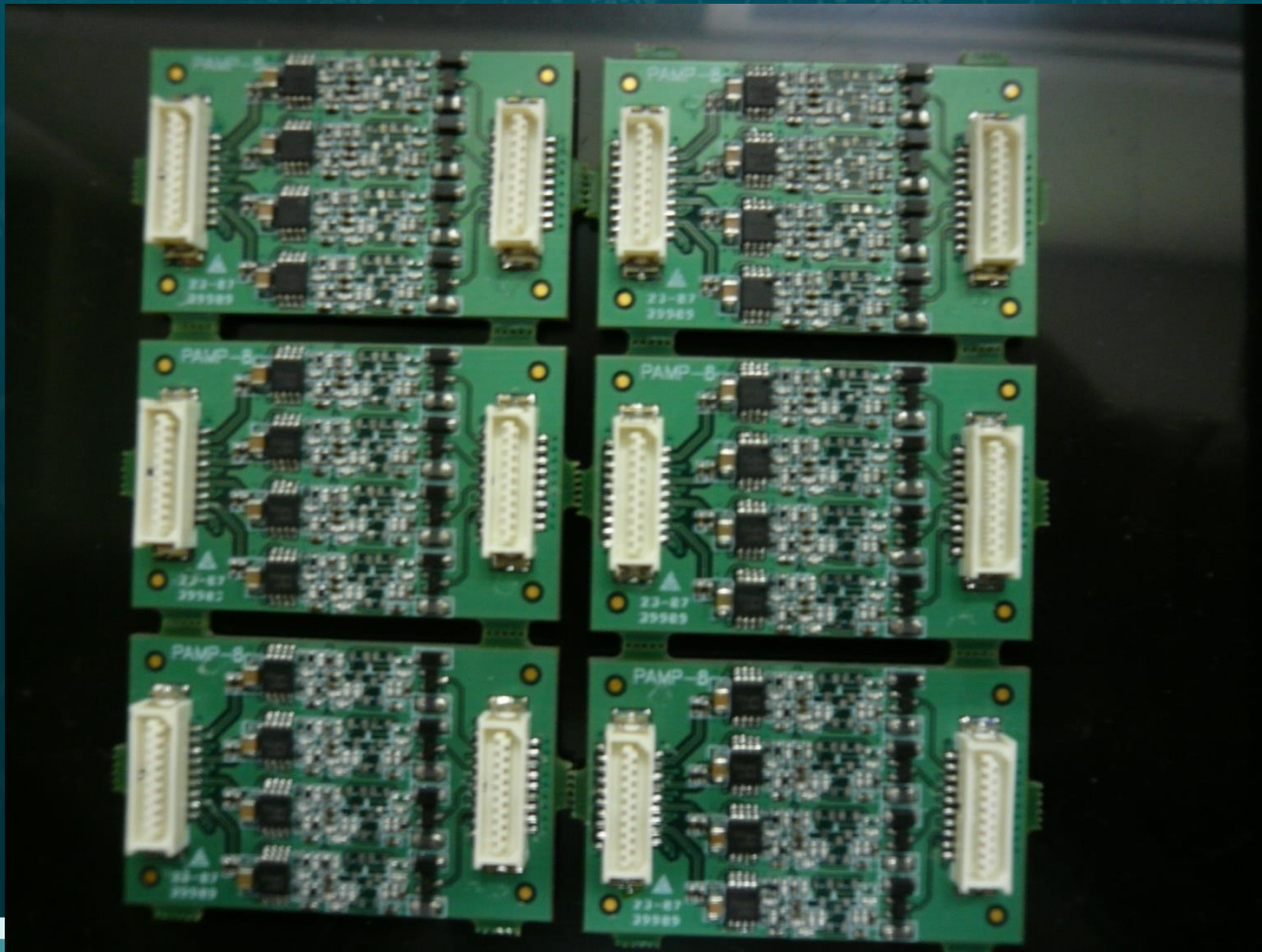


# Evaluation

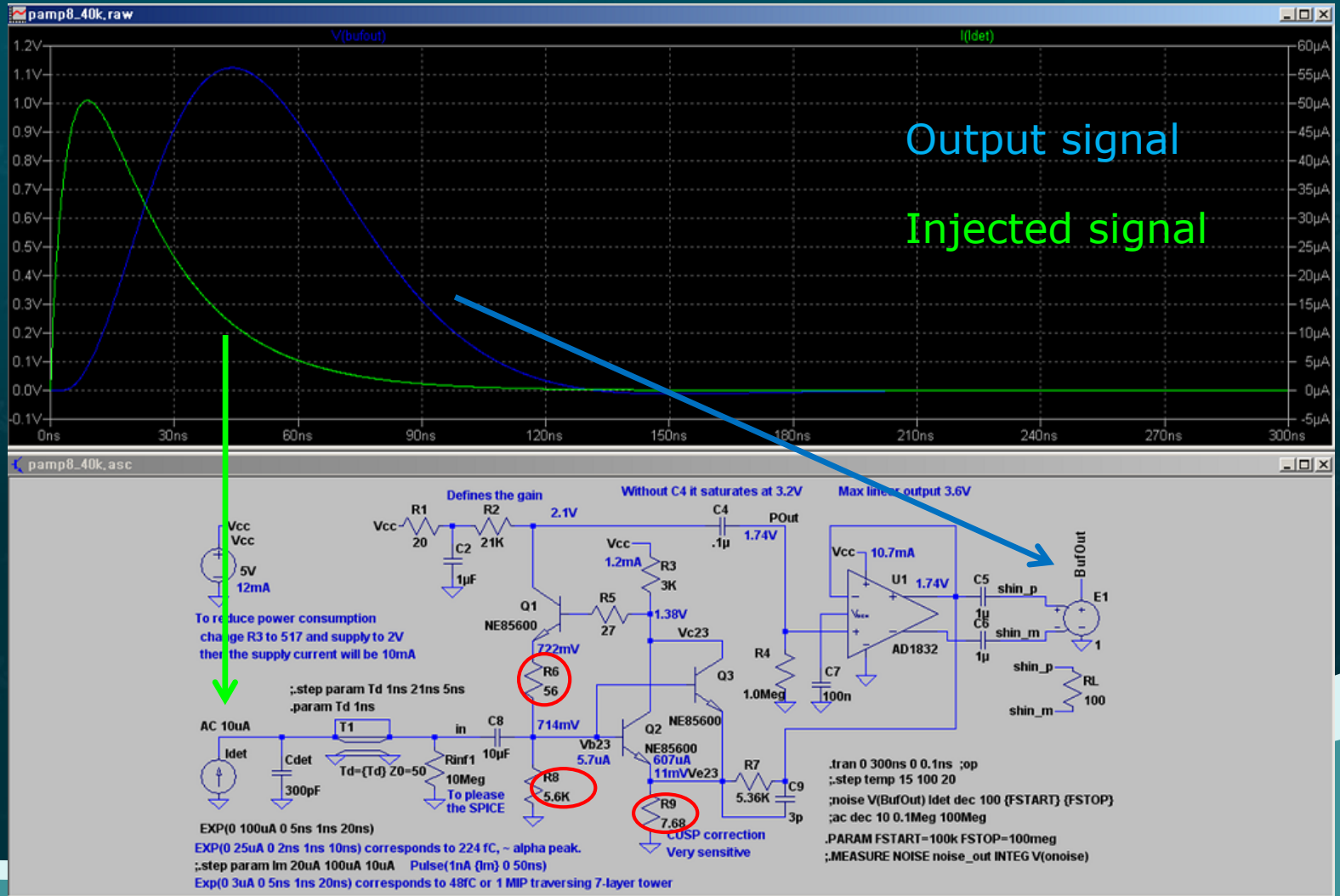
## ◆ Preamp

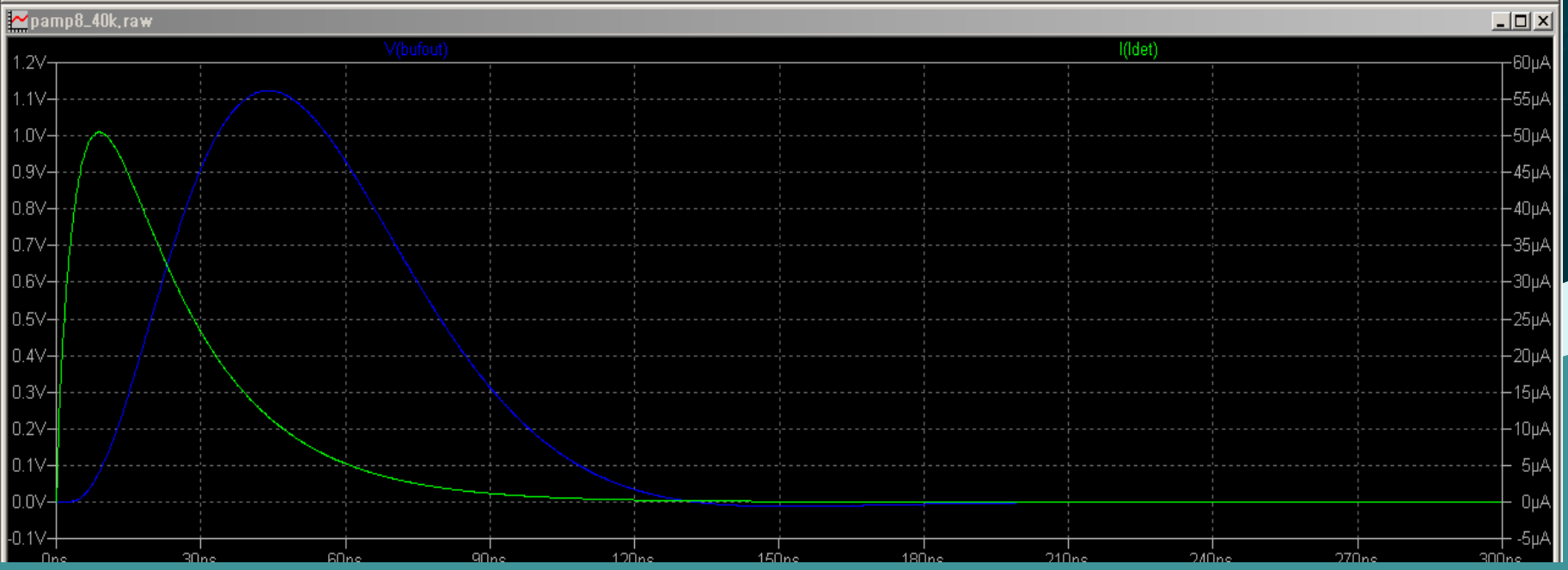
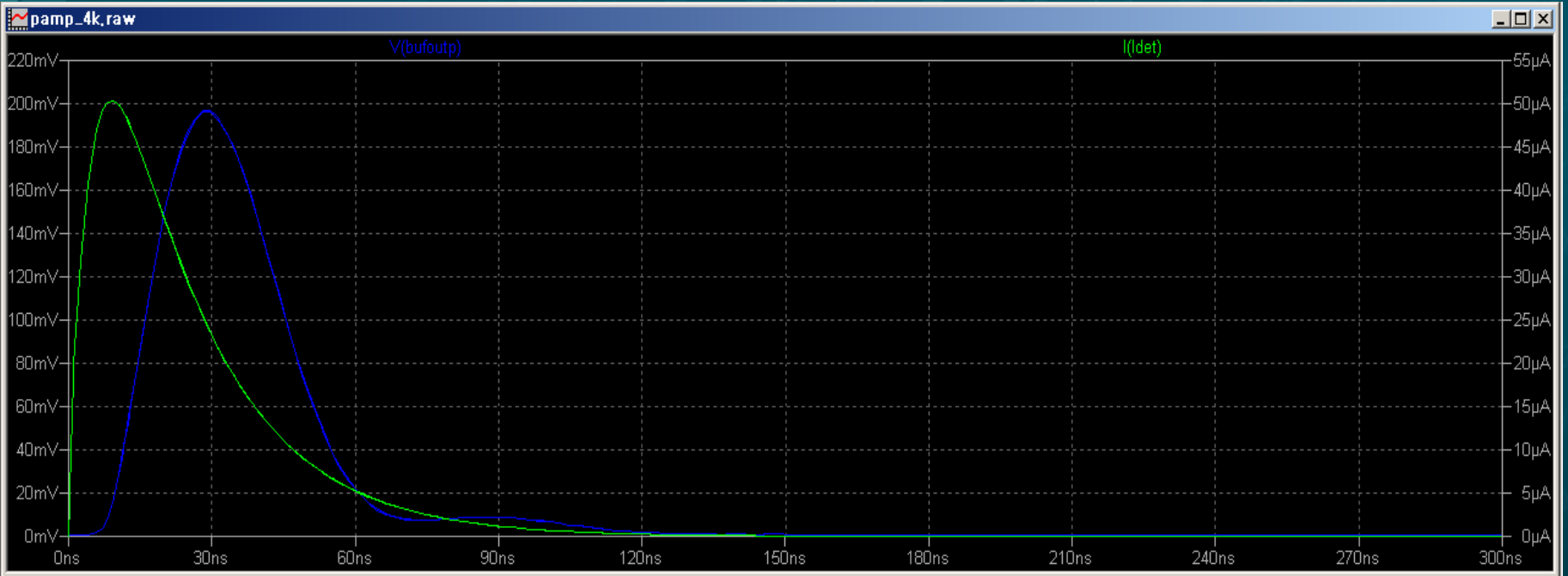
- ◆ Evaluation setup are under development. We will describe model study by LTSpice an analog circuit simulator.

# Preamp Card



# Preamp Card





# Summary and Outlook

- ◆ Cosmic test setup is ready.
- ◆ Preamp models are under study.