PRE-INSTALLATION @ MIB AND MORE

USC

{ Carl Rosenfeld

INFN-MIB

{ Paolo Carniti, Lorenzo Cassina,
Claudio Gotti, Matteo Maino, Gianluigi
Pessina

Around: Andrea Giachero
Electronics System Scheme: test @ UCLA

Links to the detectors: PEN and glue Kapton boards.

Bias and load resistors

Main board

Very front-end (on the fridge)

Antialiasing

Detector

K = Kapton

J = Constantan

= tested at UCLA

= under test at UCLA

Heater Pulser

Calibration Pulse Gen.

Main-board power distribution

Backplane

Linear Supply, ±9 V, ±5 V

Power supply system

Glue Logic from DAQ to ALL blocks

Glue Logic

Bessel Filter

Small Faraday Cages

Close to the DAQ

DAQ

48 V AC/DC

DC/DC 48 V to 12/6 V

GS, 30 July 2014
Electronics System Scheme: pre-installation @ MIB

Links to the detectors: PEN and glue Kapton boards.

Detector

Very front-end (on the fridge)

Main board

Bias and load resistors

Backplane

Pre

SS

X6

Glue Logic

Bessel Filter

Antialiasing

Small Faraday Cages

Close to the DAQ

DAQ

Power supply system

Linear Supply, ±9 V, ±5 V

DC/DC 48 V to 12/6 V

48 V AC/DC

Calibration Pulse Gen.

Heater Pulser

Glue Logic from DAQ to ALL blocks

= @ MIB

= K = Kapton

= PEN

= Constantan

GS, 30 July 2014
Electronics System Scheme: pre-instal. starting @ MIB

Links to the detectors: PEN and glue Kapton boards.

Detector

Very front-end (on the fridge)

Main board

Bias and load resistors

Pre

SS

X6

Backplane

Main-board power distribution

Heater Pulser

Calibration Pulse Gen.

Antialiasing

Bessel Filter

Glue Logic from DAQ to ALL blocks

Small Faraday Cages

Close to the DAQ

Linear Supply, ±9 V, ±5 V

DC/DC 48 V to 12/6 V

48 V AC/DC

Power supply system

Glue Logic

Backplane

GS, 30 July 2014
Electronics System Scheme: in development @ MIB

Detection Scheme:
- Links to the detectors: PEN and glue Kapton boards.

Very front-end (on the fridge):
- Pre
- Bias and load resistors
- SS
- X6
- Main board
- Backplane
- Glue Logic

Bessel Filter
- x12
- Glue Logic
- Backplane

Small Faraday Cages
- Close to the DAQ

Power supply system:
- DC/DC 48 V to 12/6 V
- 48 V AC/DC

Glue Logic from DAQ to ALL blocks

Calibration Pulse Gen.
- Heater Pulser

Linear Supply ±9 V, 9 V

Main-board power distribution

Detector

K = Kapton

J = PEN

J = Constantan

GS, 30 July 2014
Development @ MIB

1. Underplane: designed and PCB prototyped, component ordered, assembling ordered. These are prototypes only.
3. Linear power voltage supply: prototypes received this Monday, test started.
4. Glue logic: pending.
Electronics System Scheme: cables procurement @ MIB

Links to the detectors: PEN and glue Kapton boards.

Detector

Very front-end (on the fridge)

Pre
SS
Bias and load resistors
X6
Backplane
Glue Logic

Main board

Main-board power distribution

Antialiasing

Bessel Filter

Small Faraday Cages
Close to the DAQ

DAQ

Heater Pulser

Calibration Pulse Gen.

Glue Logic from DAQ to ALL blocks

Linear Supply, ±9 V, ±5 V

DC/DC
48 V to 12/6 V

48 V AC/DC

Power supply system

= PEN
= Constantan
= Kapton

GS, 30 July 2014
Electronics System Scheme: cables procurement @ MIB

1. Fridge – frontend: order done, material arrives first week of September, assembling time 2 weeks;

2. Front-end – Bessel: order done and most of the cables stoked;

3. Bessel - Bessel2DAQ: order on the way at Genova;

4. Bessel2DAQ – DAQ: available @ Genova;

5. ACDC – DCDC: order on the way;

6. DCDC – Voltage protection/filter: available;

7. Voltage protection/filter – Linear power supply: order done, material arrives first week of September, assembling within end of September.
Electronics on the fridge

There are 2 proposed solutions for the electronics locations.
Both solutions are under construction and will be verified.
Electronics on the fridge: solution 1
Electronics on the fridge: solution 2
FRONTEND to DAQ: crates

- Bessel crate
- Guillotine
- Cable
- Faraday cage wall
- DAQ crate
- Bessel crate

GS, 30 July 2014