MPOD commissioning ENH1

Test Procedure

MPOD-01 and MPOD-02 are reserved for LV boards while MPOD-00 is for HV boards and they are located in the main rack 1. Each board has 8 channels, first 4 channels (e.g.: 0-3) can be read from the upper connector while other 4 channels (e.g.:4-7) from the bottom connector on each LV boards.

The LV channels can be controlled/displayed either through MPOD front panel (detailed instruction can be found on: MPOD Features.) or FSM. The MPOD commissioning has been performed in 2 categories. Step by step test procedure is explained below.

1. Basic mapping in FSM:

   • Connect to FSM in ENH1.

   //login to the faser dcs in ENH1
   ssh -XYC username@faser-dcs-001.cern.ch

   //run the mpod_channels.sh script to open the FSM interface.
   source /data/mpod_channels.sh

   • After you run the script the FMS interface will appear.
To see the list of channels click on "Show" button.

- First 18 channels are reserved for HV channels (e.g: FASERDCS1:STATION0/LAYER0/MODULE0-3/HV)
- Rest of the channels in the list reserved for LV channels. (e.g: FASERDCS1:STATION0/LAYER0/MODULE1/VDD)

- Choose one of the channels you want to control by clicking on it. Another window will appear related to the selected channels.
  - Channels settings window will appear when you click on "Show" button.
    - The panel at the top left the values for the analogue VCC and digital VDD voltage appear.
    - The panel at the bottom left indicates whether the modules are OFF or ON status.

- Check the status of the channels in FSM and MPOD control panel. Make sure all channels are "OFF" status.

- Switch on each channel/module in FSM individually.

2. Hardware-wise:

- Cabling and test set up for LV Channels:
- Tracker LV PS Cable 02 should be connected from MPOD LV boards to PP. (Only one cable was used to check each LV channels.)
• Read states and voltage values from the screen of MPOD. Measure VCC/VDD voltage values using a multimeter on the patch panel. Compare the values. Nominal LV values: LV values are VDD ~4V and VCC ~3.5V.

• Repeat the same procedure for other LV boards by moving the LV cable from one connector to other for each board.

• Cabling and test set up for HV Channels

• HV interlock cable 2 should be connected from MPOD HV boards to TIM.
• HV power to splitter cable 1 should be connected from MPOD HV boards to HV splitter "IN".
• HV splitter to tracker cable 1 should be connected from HV splitter "OUT" - "CH0" connector to PP.

• Set the voltage values on FSM (from 10 to 150V ). Measure the voltage values using a multimeter on Patch Panel side. The HV set and read back values should match on both FSM and PP. Nominal HV value is 150V.
• Repeat the same procedure for "OUT-CH1", "OUT-CH2", "OUT-CH5", "OUT-CH6", "OUT-CH7" on HV splitter ("OUT-CH6", "OUT-CH7") and for other 2 HV boards.
Test Procedure