EPICS COLLABORATION MEETING

CBM-TOF DCS STATUS

June 2019, Sheng Dong

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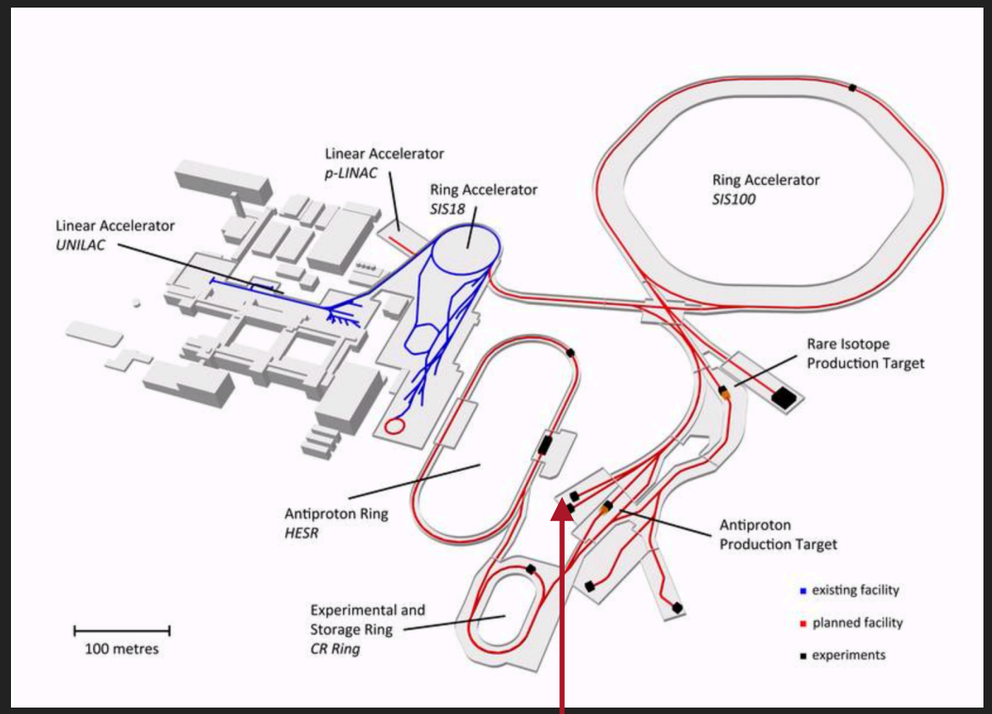
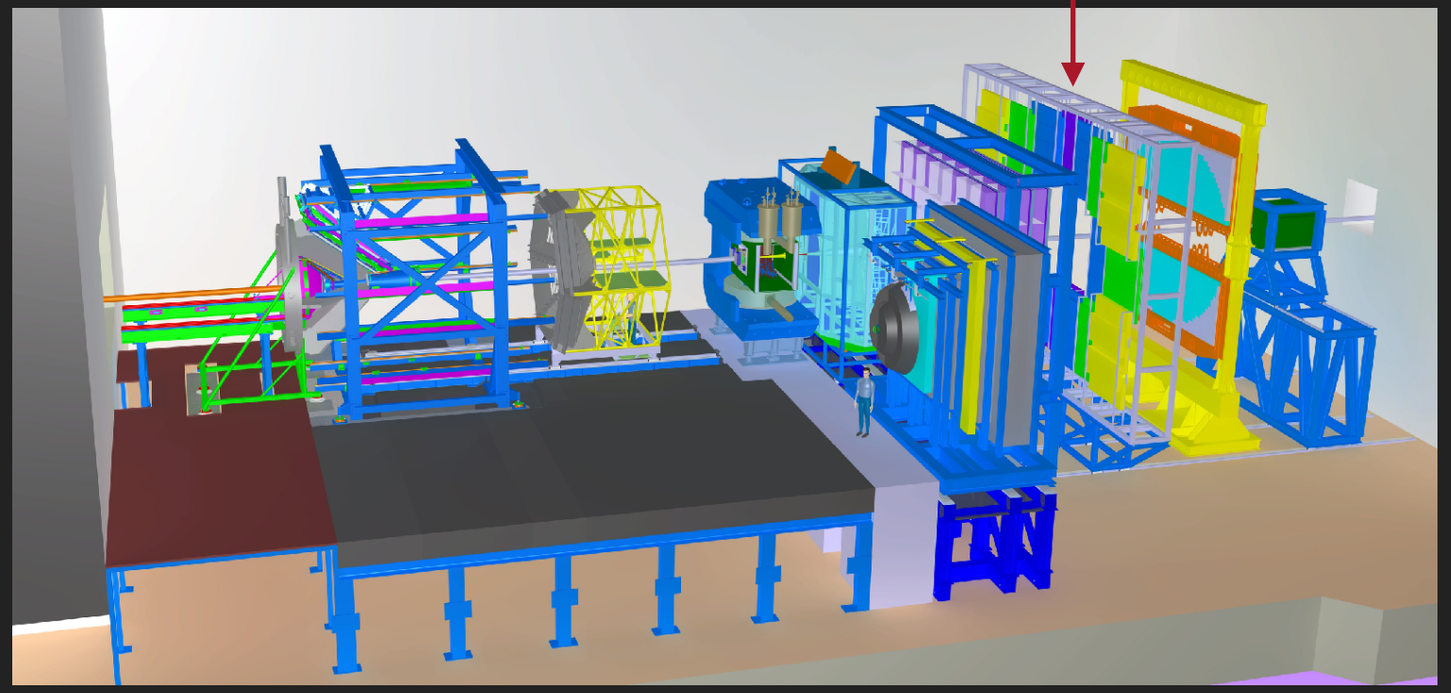
- GSI: GSI Helmholtz Centre for Heavy Ion Research
- FAIR: Facility for Antiproton and Ion Research
- CBM: The Compressed Baryonic Matter experiment
- mCBM: mini-CBM
- TOF: Time of Flight



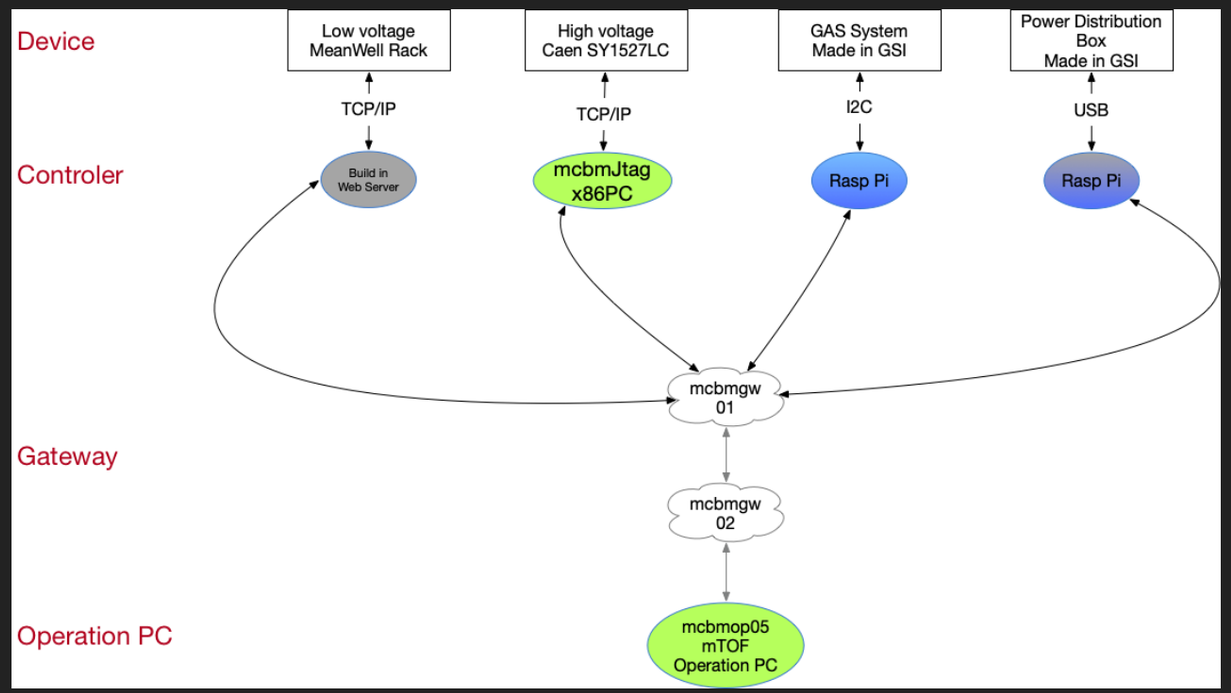
FAIR/GSI



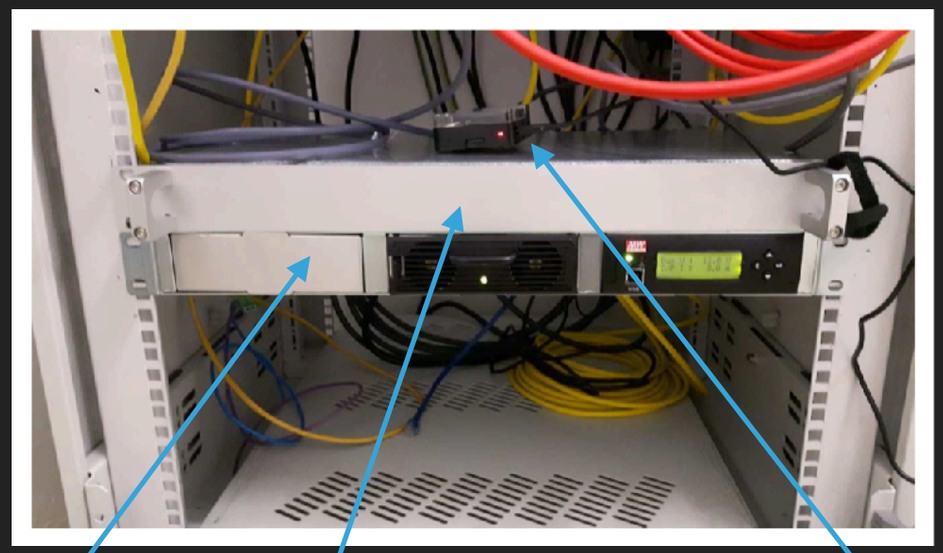
CBM 3D models

INSTRUMENTS

- LV:
  - MeanWell Power Supply.
  - Power Distribution Box(Demo Version), Arduino as MCU.
  - Raspberry Pi
- HV:
  - CAEN SY1527LC Crate
  - 4 A1526 HV Board(6 Channels)
- GAS:
  - Control box made by GSI
  - Bronkhorst control units.
  - Raspberry Pi



Structure@mCBM, Beam@March 2019



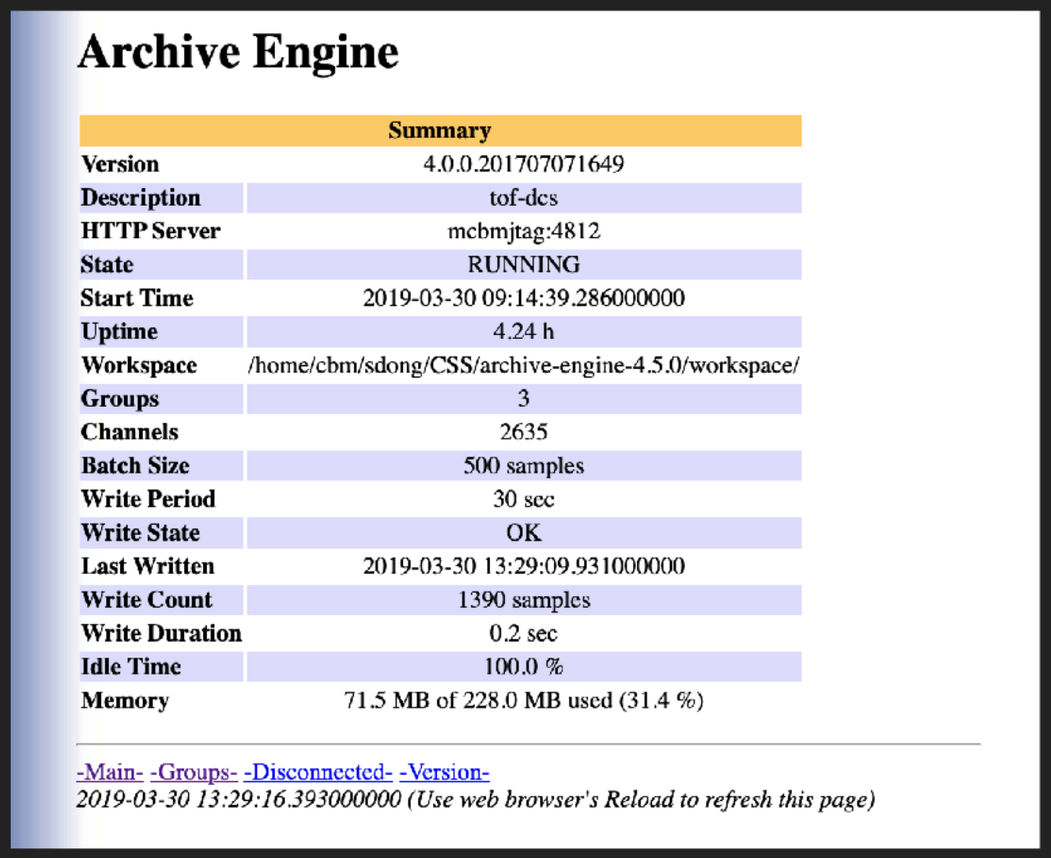
Distribution Box for eToF@STAR

HV Crate(Back Side)

Bronkhorst Control Unit

ARCHIVE & SIMPLE EXCEPTION HANDLE

- ARCHIVE:
  - CSS Archive Tools
  - PostgresSQL
  - 2635 channels
- Simple exception handle
  - HV/LV/GAS
  - State notation language and Sequencer



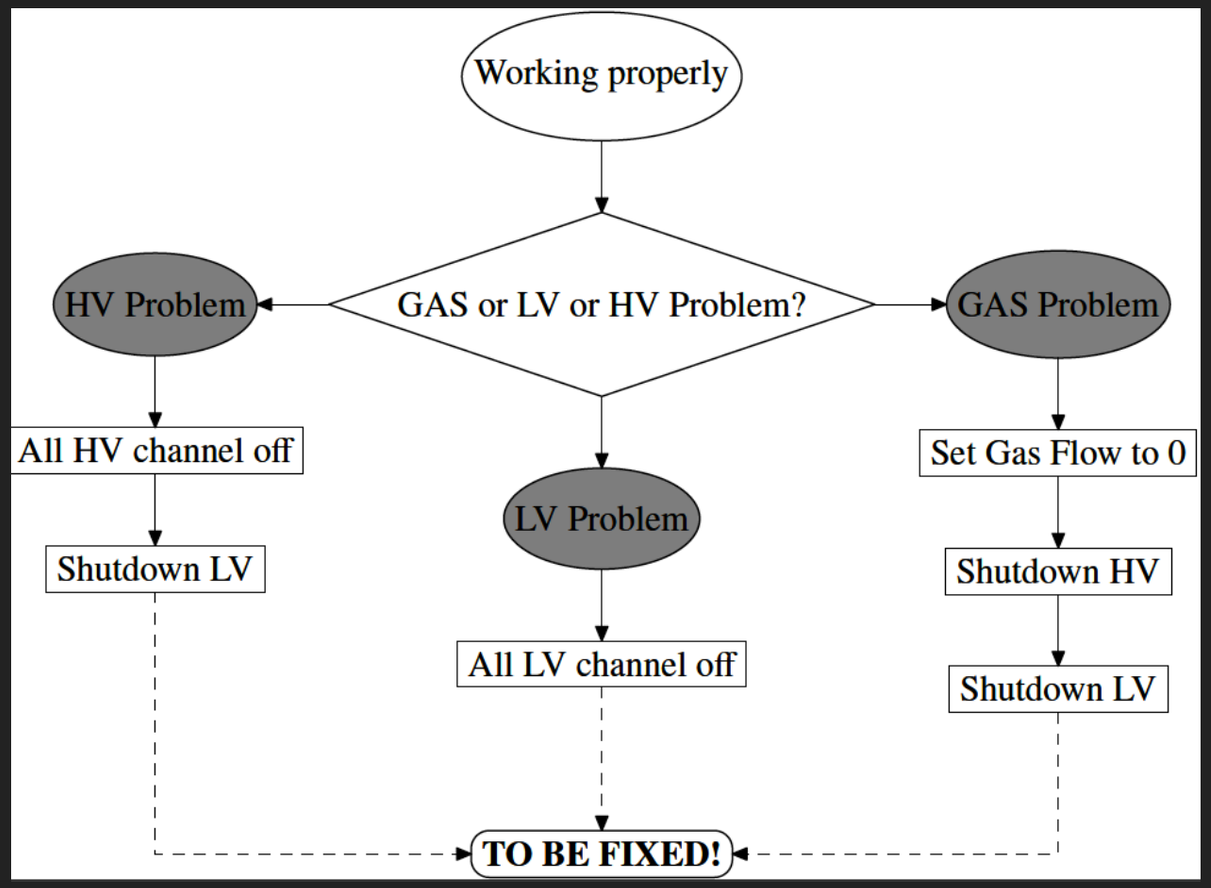
Archive Engine

Summary	
Version	4.0.0.201707071649
Description	tof-dcs
HTTP Server	mcbmjtag:4812
State	RUNNING
Start Time	2019-03-30 09:14:39.286000000
Uptime	4.24 h
Workspace	/home/cbm/sdong/CSS/archive-engine-4.5.0/workspace/
Groups	3
Channels	2635
Batch Size	500 samples
Write Period	30 sec
Write State	OK
Last Written	2019-03-30 13:29:09.931000000
Write Count	1390 samples
Write Duration	0.2 sec
Idle Time	100.0 %
Memory	71.5 MB of 228.0 MB used (31.4 %)

-Main- -Groups- -Disconnected- -Version-

2019-03-30 13:29:16.393000000 (Use web browser's Reload to refresh this page)

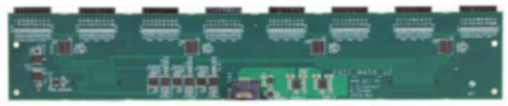
Archive Engine Status



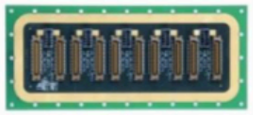
Exception handle

Readout Components

- PADI: Preamplifier board 32 CH



- Feed through PCB

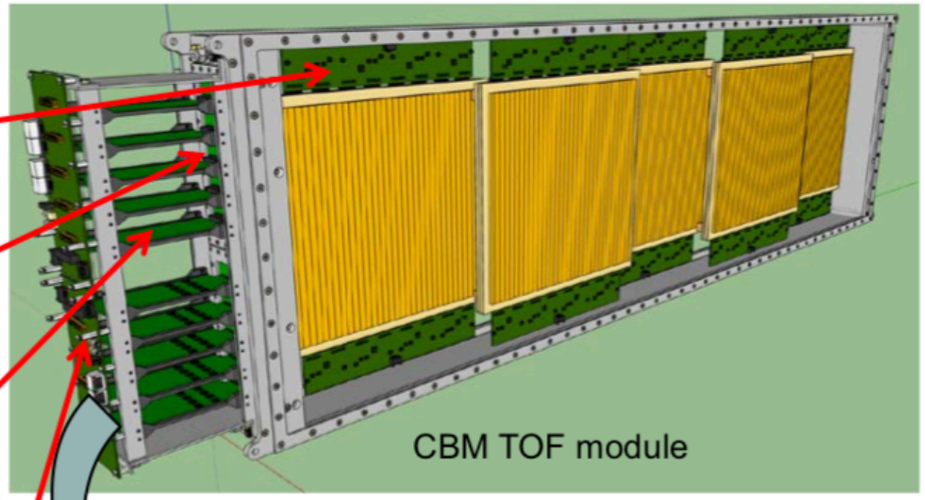


- GET4: TDC board 32 CH

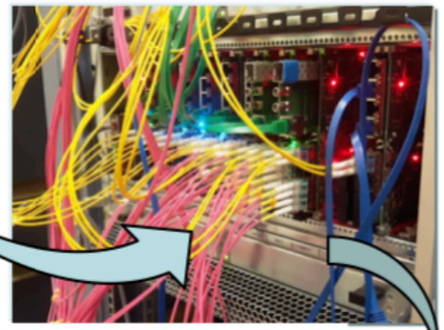
- Backplane with GBTx chip

- AFCK: FPGA board

- FLIB: FPGA PCI express card

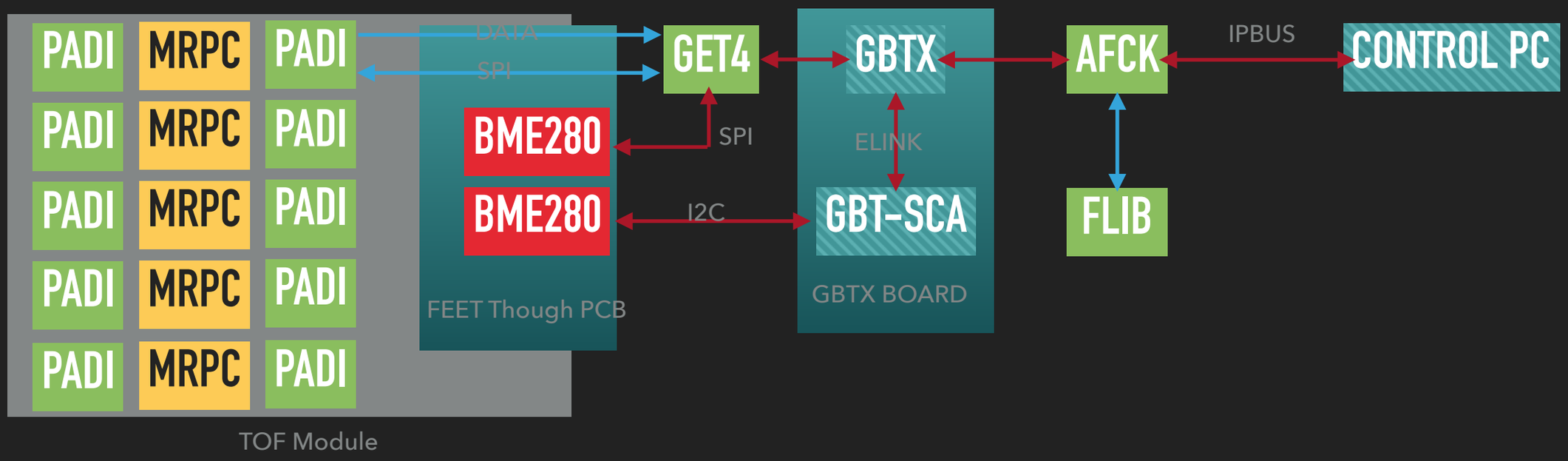


µTCA crate



HP-PC

- GBTX: The GBT chip is a radiation tolerant ASIC that can be used to implement bidirectional multipurpose 4.8 Gb/s optical links for high-energy physics experiments.
- GBT-SCA: A radiation tolerant ASIC for detector control and monitoring applications, this chip has I2C/SPI/GPIO/ADC/ DAC interfaces. In CBM, it's used to control and monitor temperature(Pressure, Humidity) sensor via I2C, and FEE status monitor and control in future.
- PADI: **P**re**A**mplifier-**DI**scriminator.
- GET4: The **G**SI **E**vent Driven **T**DC with **f**our channels.
- AFCK: The **A**MC **F**MC **C**arrier **K**intex (**AFCK**) board is a prototype of Data Processing Board (DPB) for CBM experiment.
- IPBUS: The IPbus protocol is a simple packet-based control protocol for reading and modifying memory-mapped resources within FPGA-based IP-aware hardware devices which have a virtual A32/D32 bus.
- BME280: Temperature, Pressure, Humidity sensor.



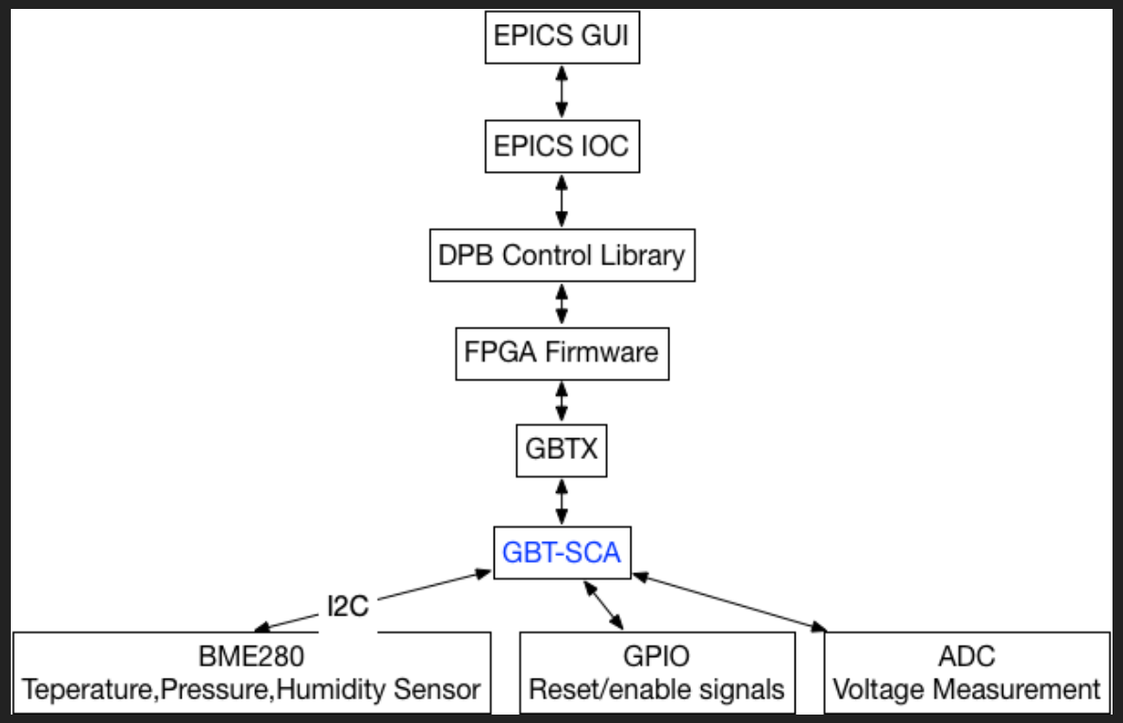
- Though GBT-SCA via I2C:

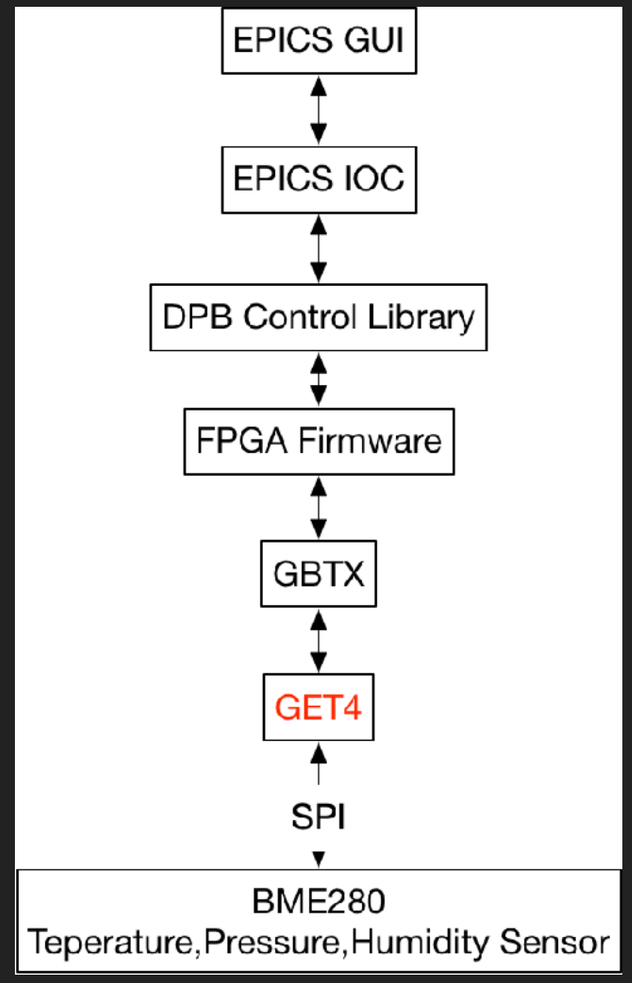
  => Driver and IOC finished, local test success.

- Though GET4 via SPI:

  => Under developing and debuging

Due to hardware problem, GBT-SCA can’t work without PCB repairing work. We switch to PLAN B at least for mCBM and eTOF@STAR.





✓LV, HV, GAS

✓Archive

➡Simple exception handles, more need to be done

➡Detector environment monitor) ongoing.

- Cave environment

- EPICS BASE 7

- CI

THANKS FOR YOUR ATTENTION!