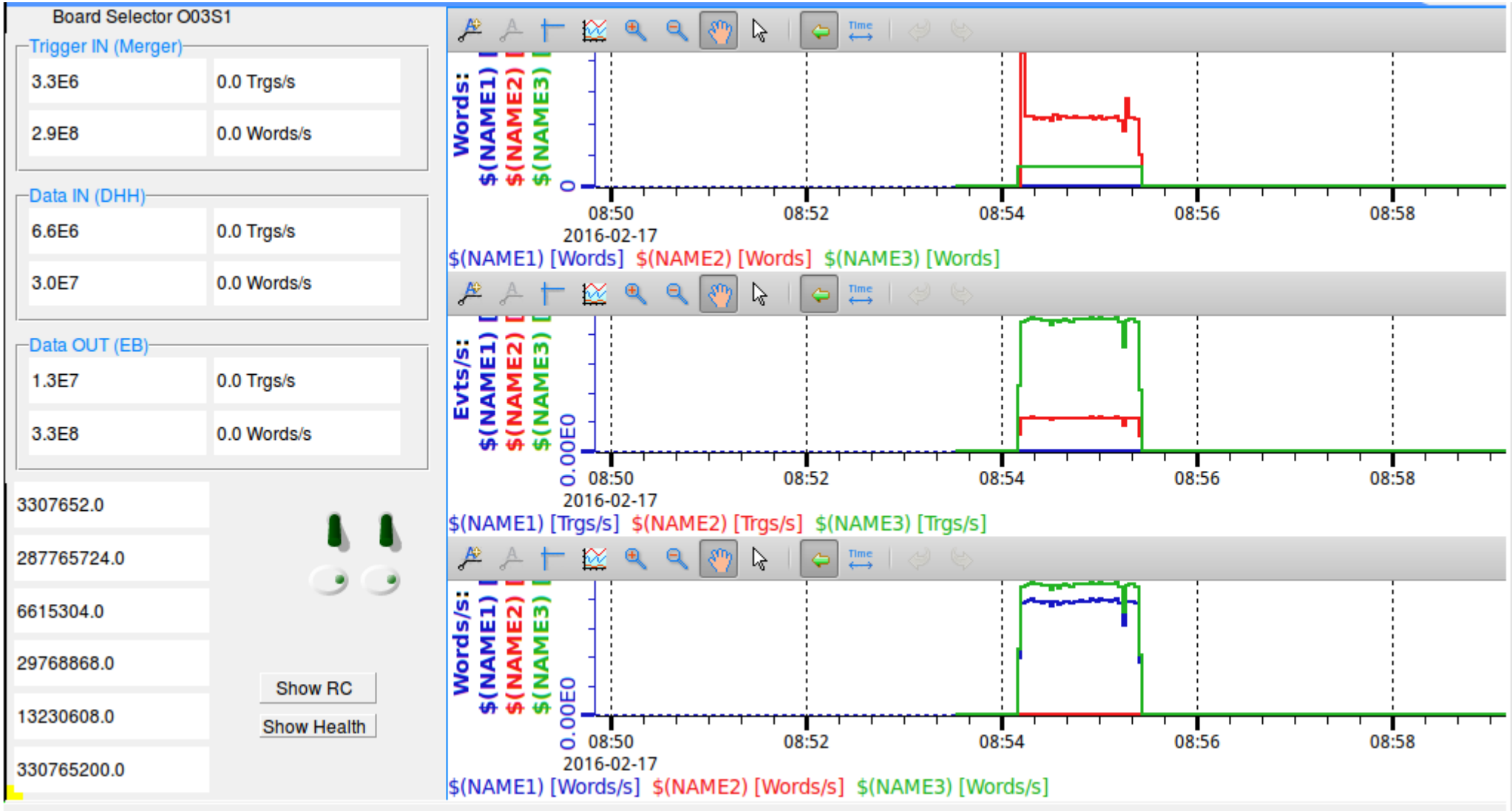
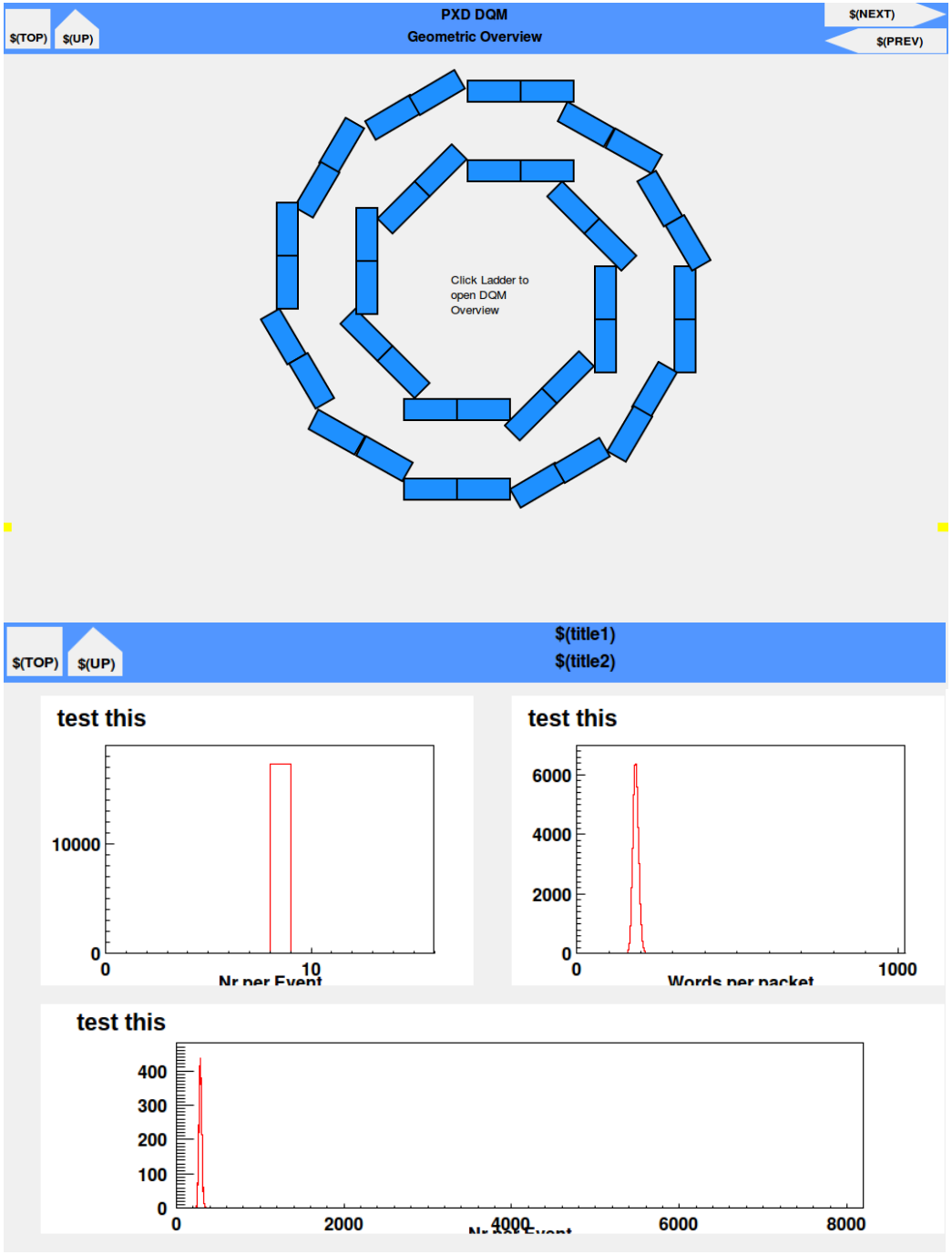
Latest SlowControl Test in Giessen

- ONSEN Firmware (plus PPC IOC) now supports counters for calculation of trigger and data rates



"DQM" – First Steps

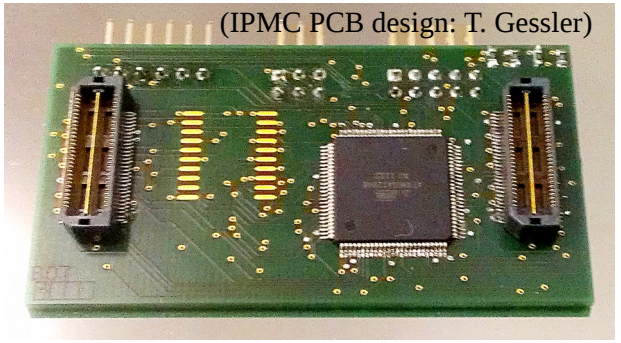


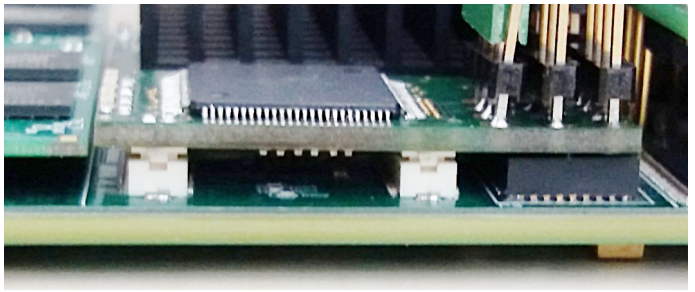
- Histograms from Express Reco (and basf2) – common for Belle II
- Working, but due to memory leak unusable at the moment

IPMI Controller, ATCA and IPMI issues

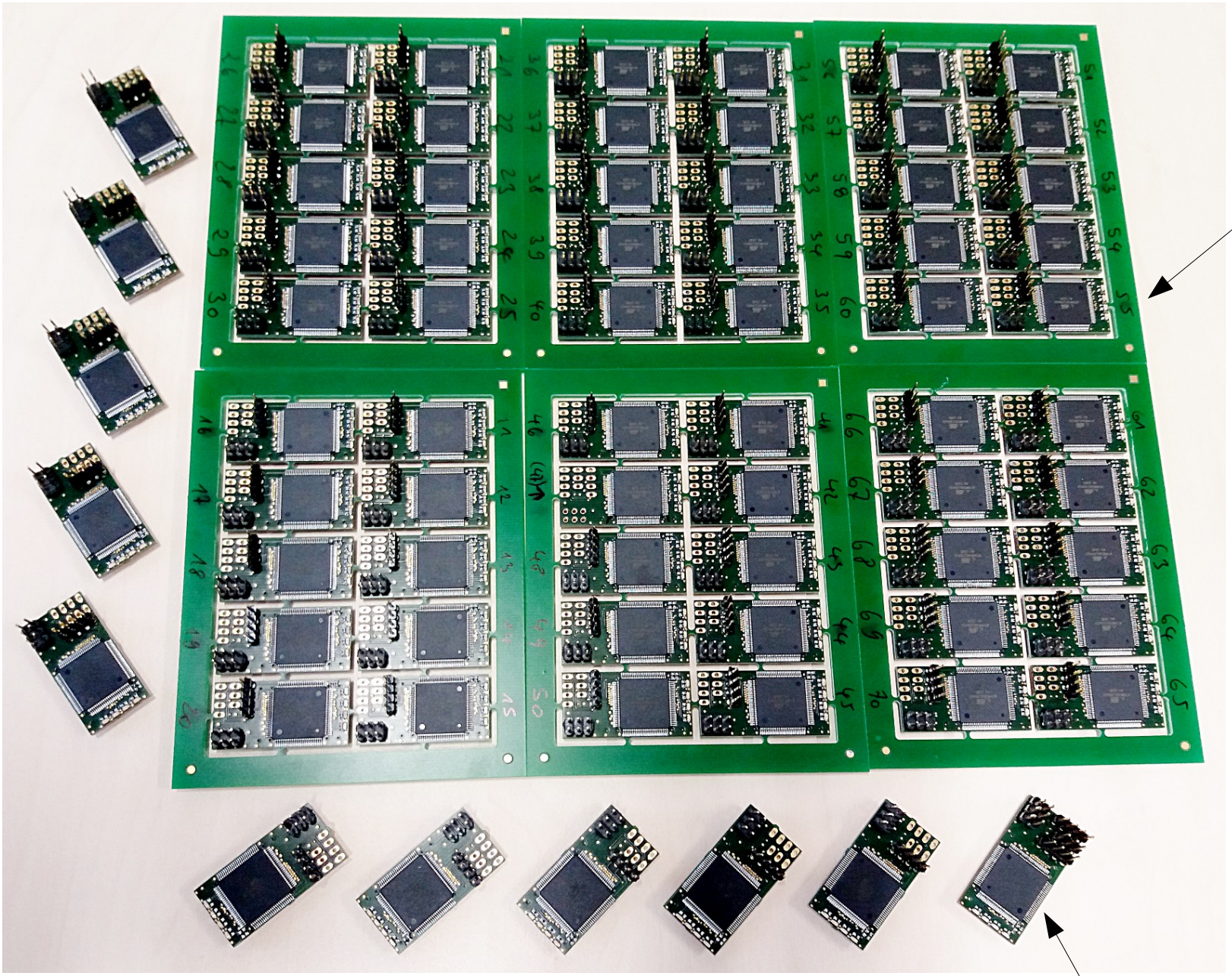
IPMI Add-On Boards – Hardware Status

- IPMI controller for ONSEN (and DATCON)
  - **two** different IPMI controller as add-on boards:
    - ATCA Carrier board (ONSEN) → **IPMC**
    - AMC (ONSEN and DATCON) → **MMC**
  - MCU: ATXMEGA 128
  - Extra RAM and EEPROM on IPMC


(IPMC PCB design: T. Gessler)



- Production was on hold since October. Production started after successful test with new Power Supply Unit (PSU) board design and new carrier cards in late December.
- IPMC and MMC hardware tested on final Carrier/PSU and AMC versions
- MMC and IPMC PCBs available; soldering has mostly finished
  - 68 MMC (final, tested standalone); 10 of them tested on AMC on Carrier Cards
  - ~20 IPMC (to be tested tomorrow)

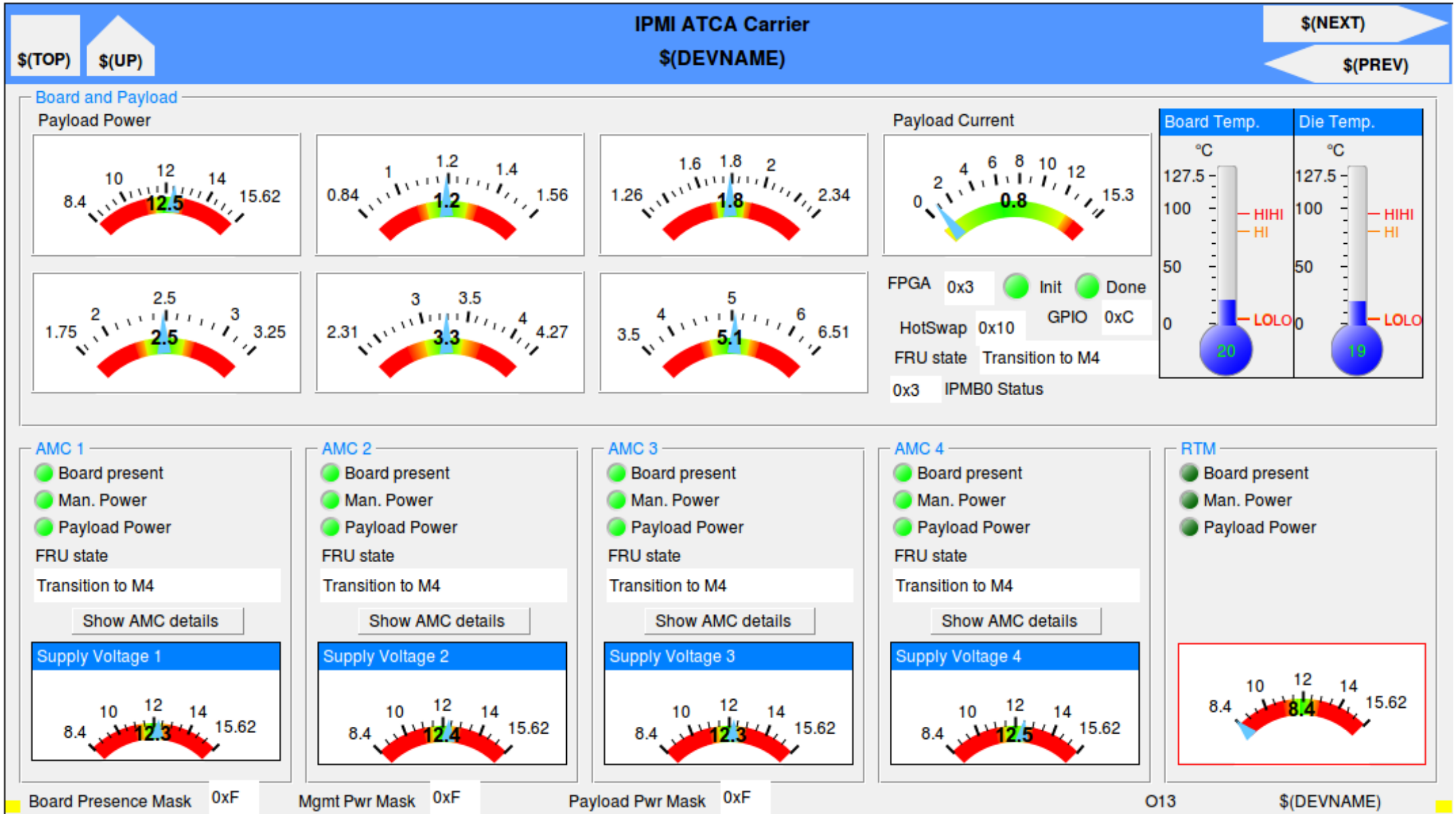

tested, but not cut out
the one and only prototype

IPMI Boards – Firmware

- Firmware implements PICMG standards as far as needed for our purpose.
- IPMC firmware needs more functionality than MMC:
  - Its an ATCA board, not AMC (or mTCA) – different standards
  - Has to work like a shelf manager for managing the AMCs
- Implemented on IPMC:
  - Hot swap/power cycle, sensor monitoring, temperature alarms ✔
  - Handling AMC boards e.g. hot swap/power cycle ✔
  - Message bridging for sensor monitoring, temperature alarms ✔
- Implemented on MMC:
  - Hot swap/power cycle, sensor monitoring, alarms ✔
  - Working in mTCA shelf (DATCON) and in Carrier board ✔
- Remote firmware updates ✔
- Firmware is already mature and stable. No big changes foreseen.
- SlowControl interface (monitoring only): IPMI → EPICS with ipmitoolIOC (M. Ritzert) ✔

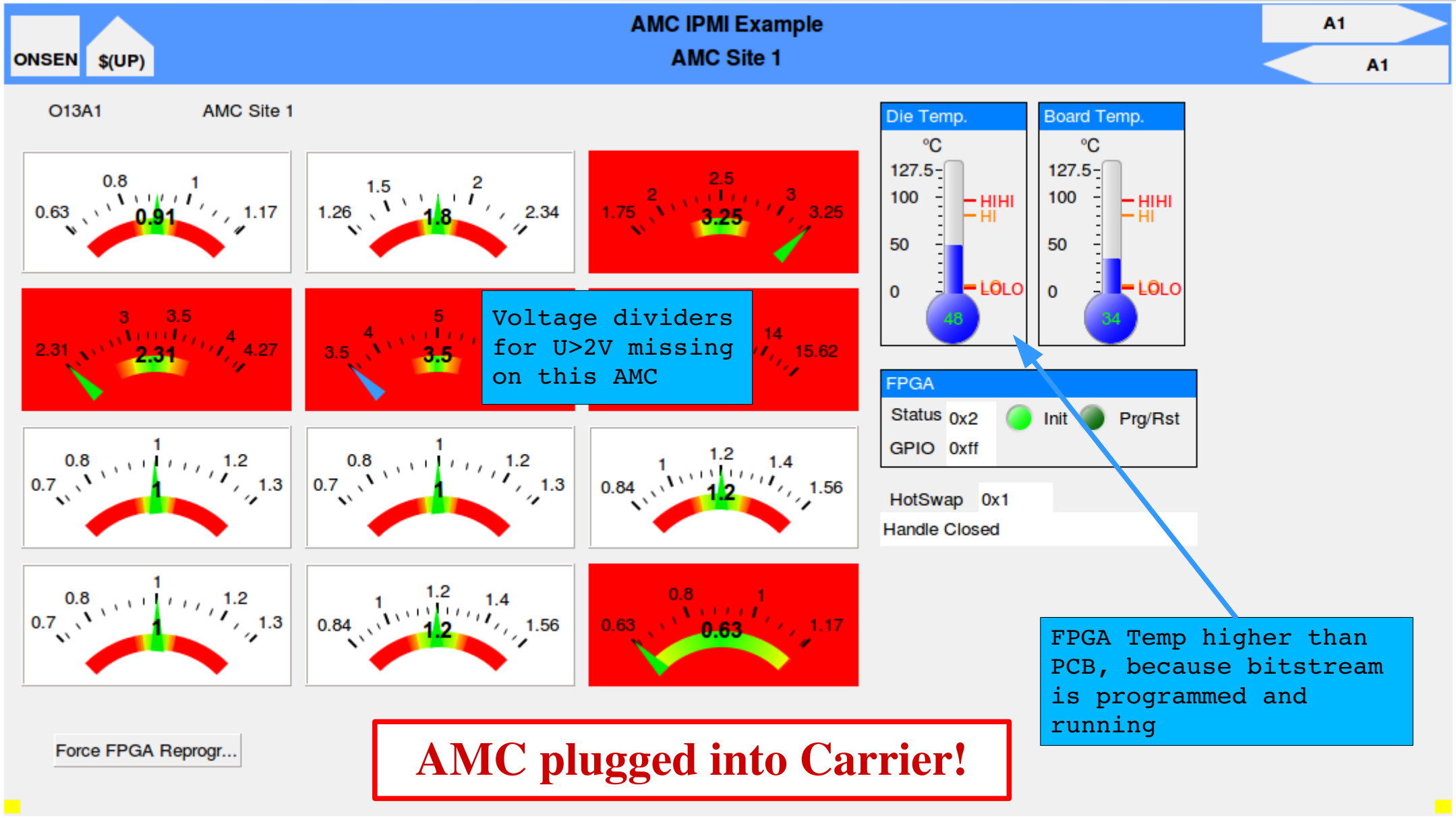
- IPMC on Carrier tested with four AMCs with MMC
  - works!
  - Problems:
    - with to many sensor reading request, timeouts, buffer full (msgs rejected)
    - event fill up buffer, important msgs get stuck … slow (no) response.
  - Rewrote sending and receiving part of IPMC firmware
  - Now this is working better and faster, still more tests needed.
  - Now: Disabled voltage and current events. TODO
- ipmitoolIOC often sees “read invalid”
  - increased timeout value from 1s to 10s solves this!
- ipmitoolIOC has problem if a sensor is read two times (mbbi and mbbidirect)
  - workaround: different scan intervals (5s and 10s).

SlowControl – Carrier (IPMC) Sensors



All real states and readings, communication with MMC is working as expected.

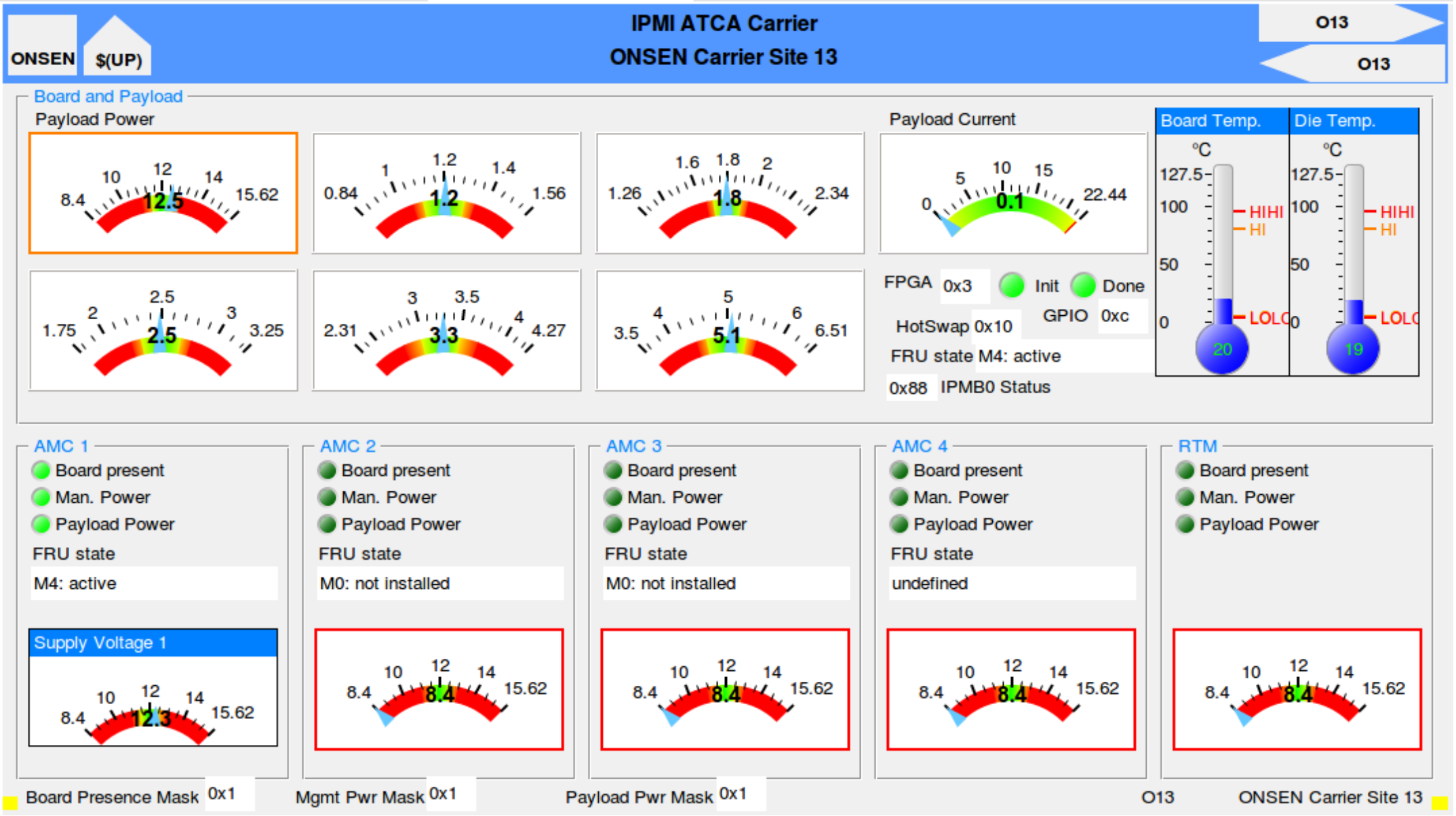
CSS – AMC (MMC) Sensors



AMC plugged into Carrier!

All real states and readings, communication with MMC is working as expected.

SlowControl – Carrier (IPMC) Sensors



All real states and readings, communication with MMC is working as expected.