News: IPMI IOC

- Sensors are now addressed by **IPMBADDR**, **ENTITY**, **INSTANCE** and **NAME**, not by the sensor number anymore.
  - (Problem with fixed sensor numbers: They depend on the order in which boards have been activated and the number of sensors these board have)
  - **`field(INP,"#L${LINK} A${IPMI} C${ENTITY} S${INST} @NAME")`**
  - **`e.g. field(INP,"#L1 A${IPMI} C193 S${INST} @0_9V")`**
  - Name can contain spaces, dots, etc!
  - Numbers are decimal
  - Dump_database writes new format.
- Still, all sensors have to be there when IOC is started (TODO)

Problems: IPMI IOC

- Type mbbi sees b0…001 and b0…00 as identical (confusing…)
- Solved problems:
  - ipmitoolIOC often sees “read invalid”
    - workaround: increased timeout value from 1s to 10s solves this!
  - ipmitoolIOC has problem if a sensor is read two times (here: mbbi and mbbidirect but not limited to that case)
    - workaround: different scan intervals (5s and 10s).
    - solution: read only once (in most cases only one of them needed)

IPMI Controller, ATCA and IPMI issues

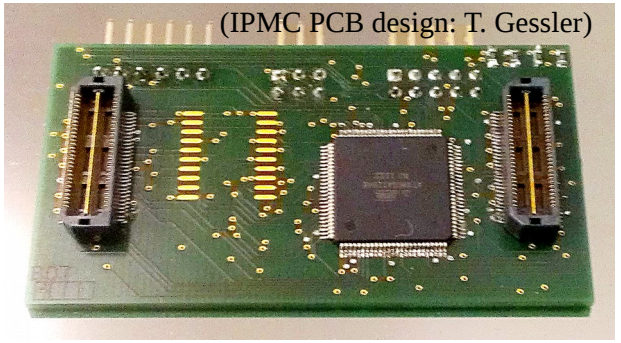
Summary IPMI for TB

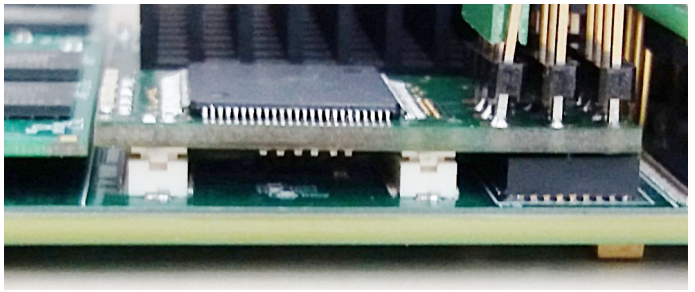
- 17 IPMC available, 2 are needed for TB
- 10 MMC available, 2 are needed for TB
  - (plus 2 for DATCON?)
- ATCA “Pizza” shelf ShM tested with ipmitoolIOC → works
  - OPI prepared
- OPI for Carrier – done
- OPI for AMC – done
  - (AMC for DATCON is prepared, too)

- IPMI for DATCON – unclear, what is status of new shelf and shelf MCU?

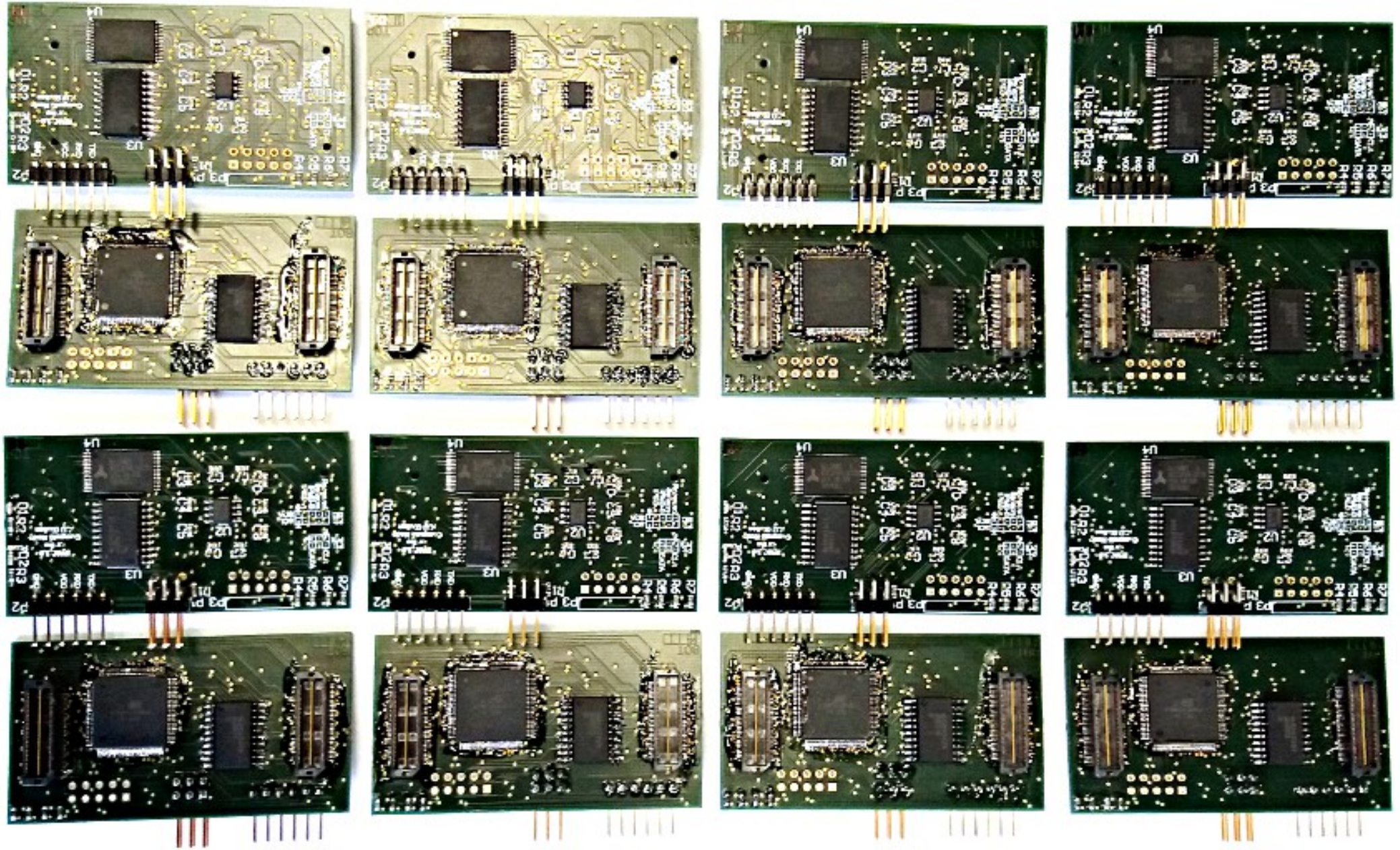
IPMI Add-On Boards – Hardware Status

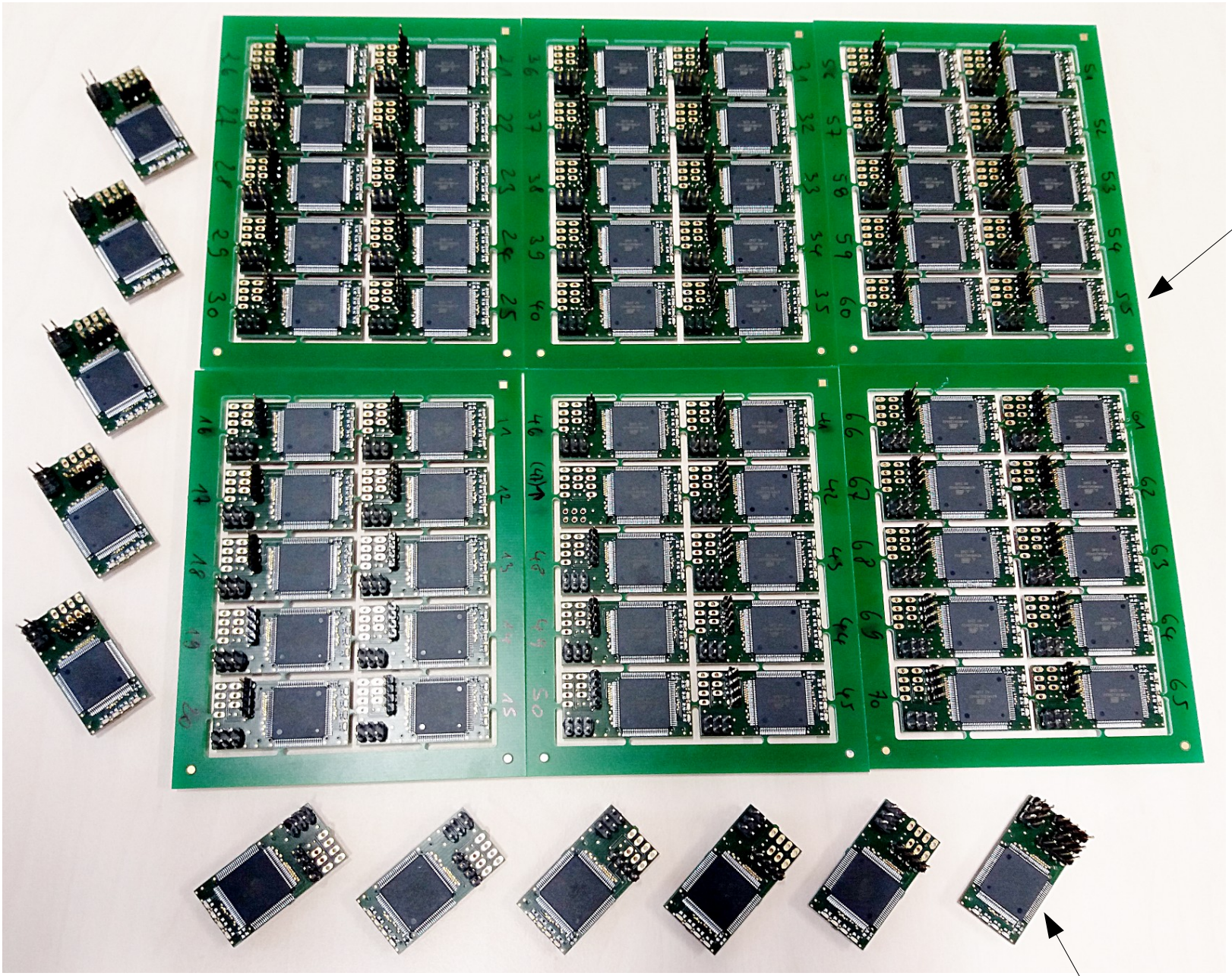
- IPMI controller for ONSEN (and DATCON)
  - **two** different IPMI controller as add-on boards:
    - ATCA Carrier board (ONSEN) → **IPMC**
    - AMC (ONSEN and DATCON) → **MMC**
  - MCU: ATXMEGA 128
  - Extra RAM and EEPROM on IPMC


(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 (tested standalone, to be tested on carrier next week)





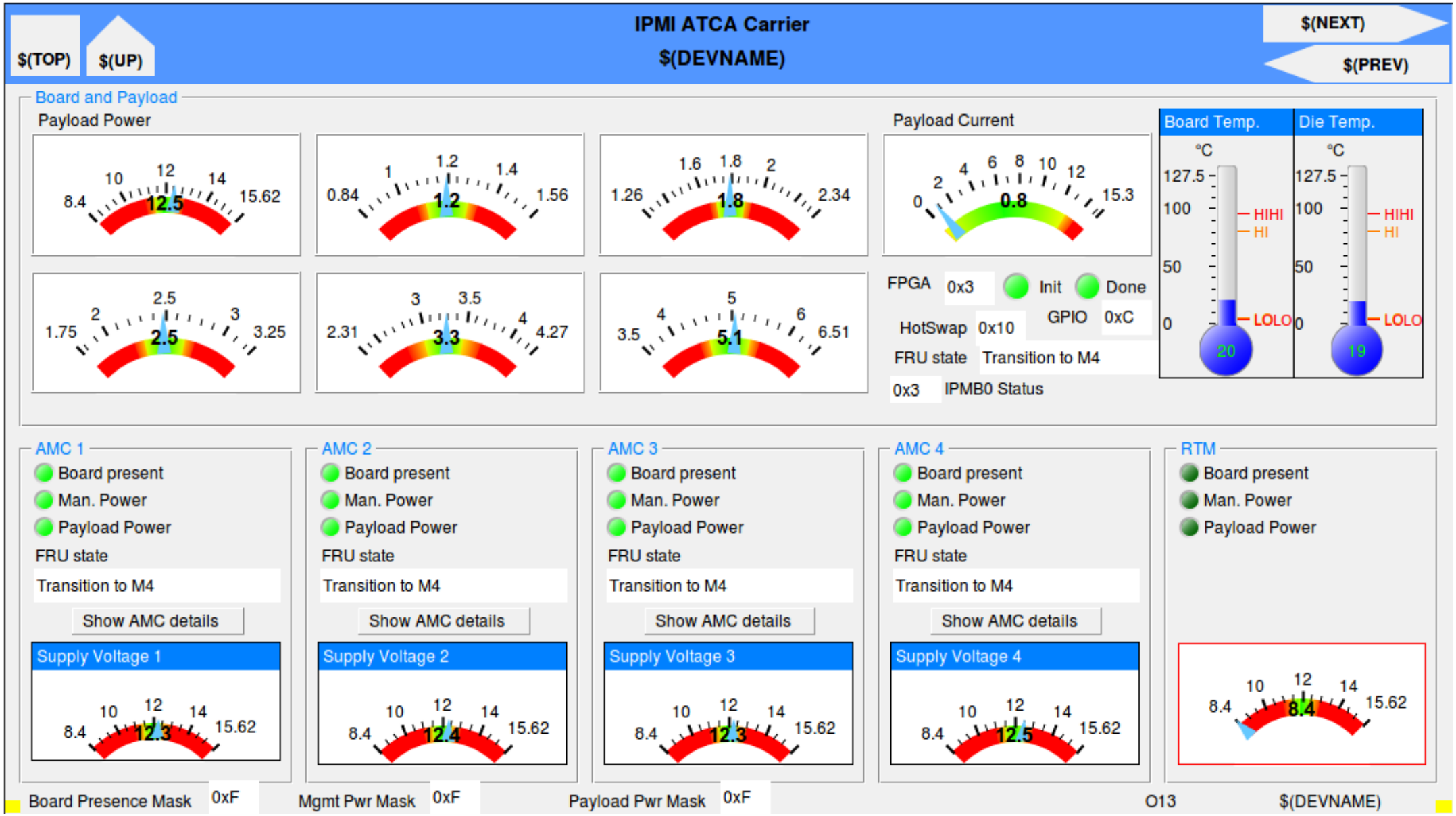
tested, but not cut out

the one and only prototype

IPMI Boards – Firmware

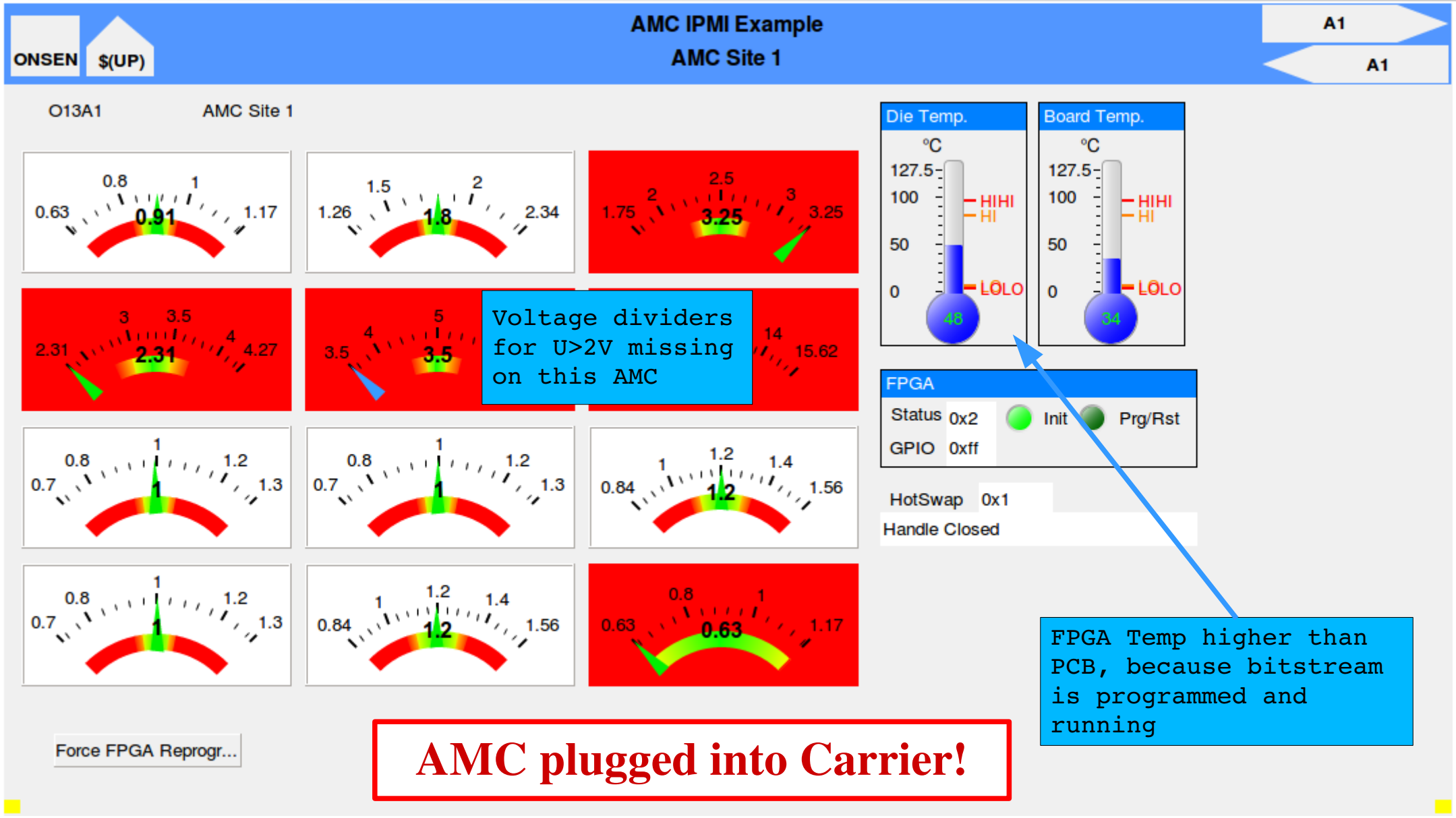
- Firmware implements PICMG standards as far as needed for our purpose.
- IPMC firmware needs more functionality than MMC:
  - Its an ATCA board, not AMC (or mTCA) – different standards
  - Has to work like a shelf manager for managing the AMCs
- Implemented on IPMC:
  - Hot swap/power cycle, sensor 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) ✔

SlowControl – Carrier (IPMC) Sensors



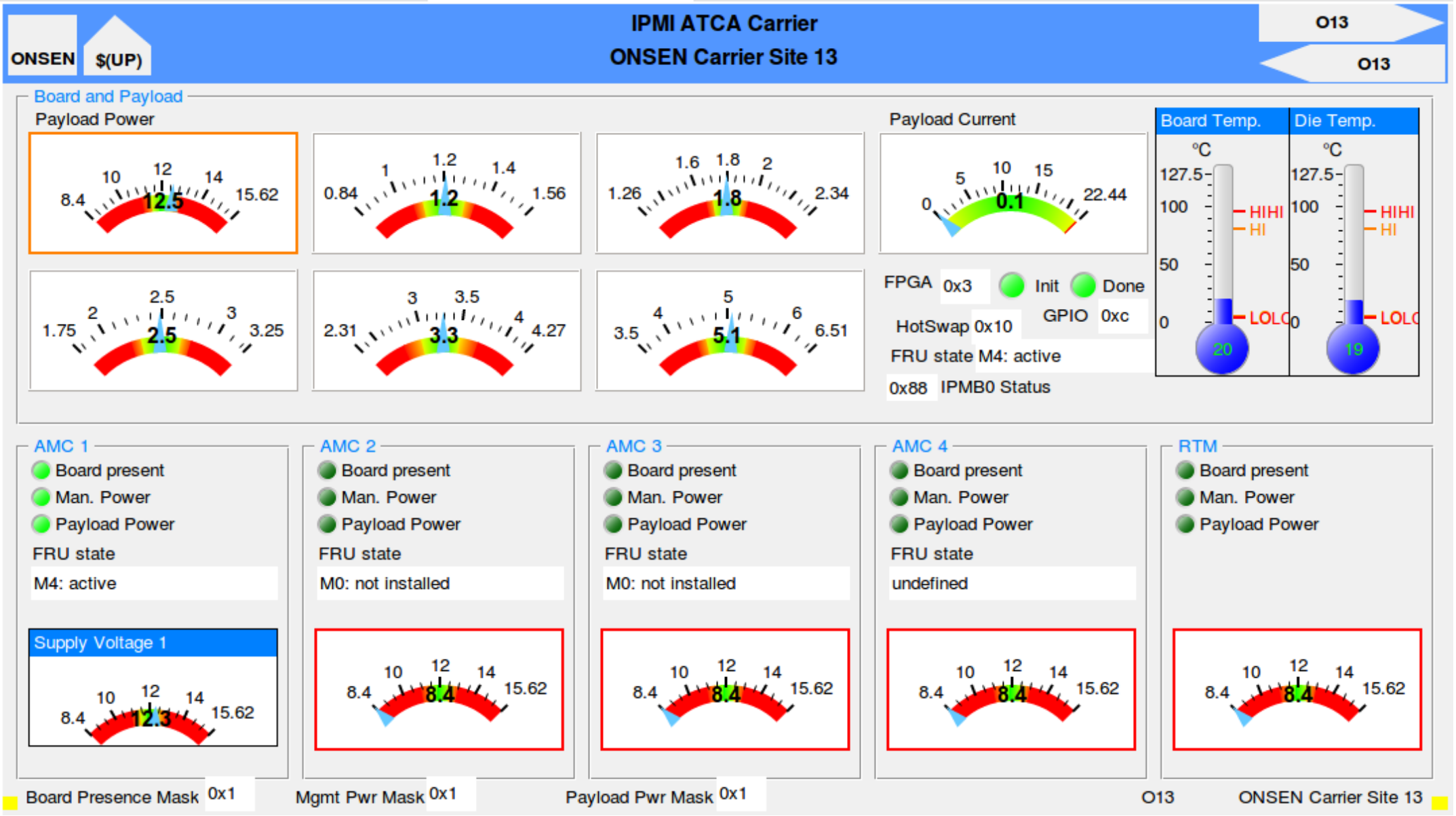
All real states and readings, communication with MMC is working as expected.

CSS – AMC (MMC) Sensors



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.

Latest SlowControl Test in Giessen

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