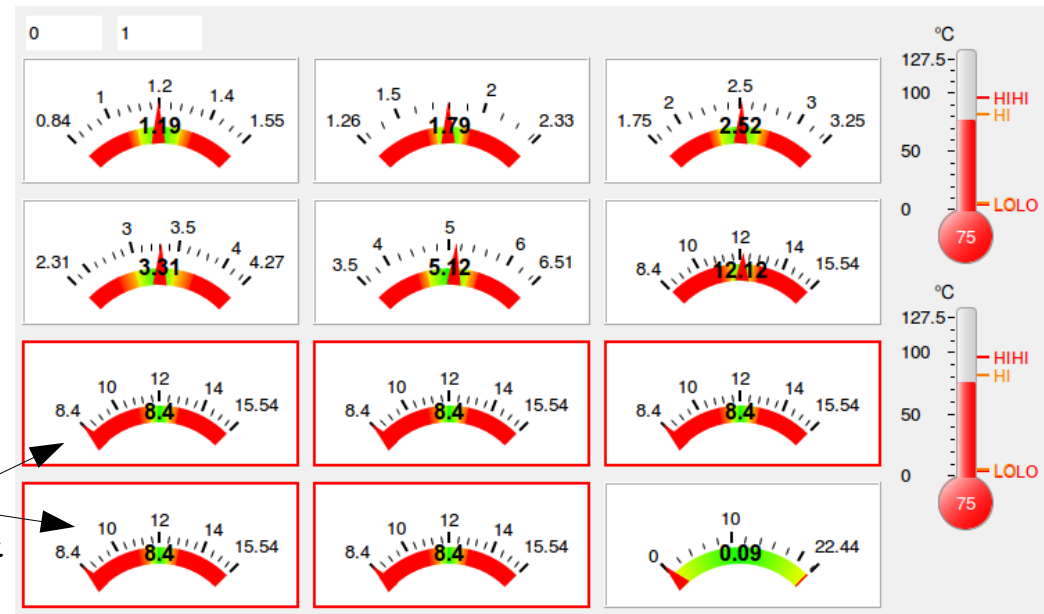
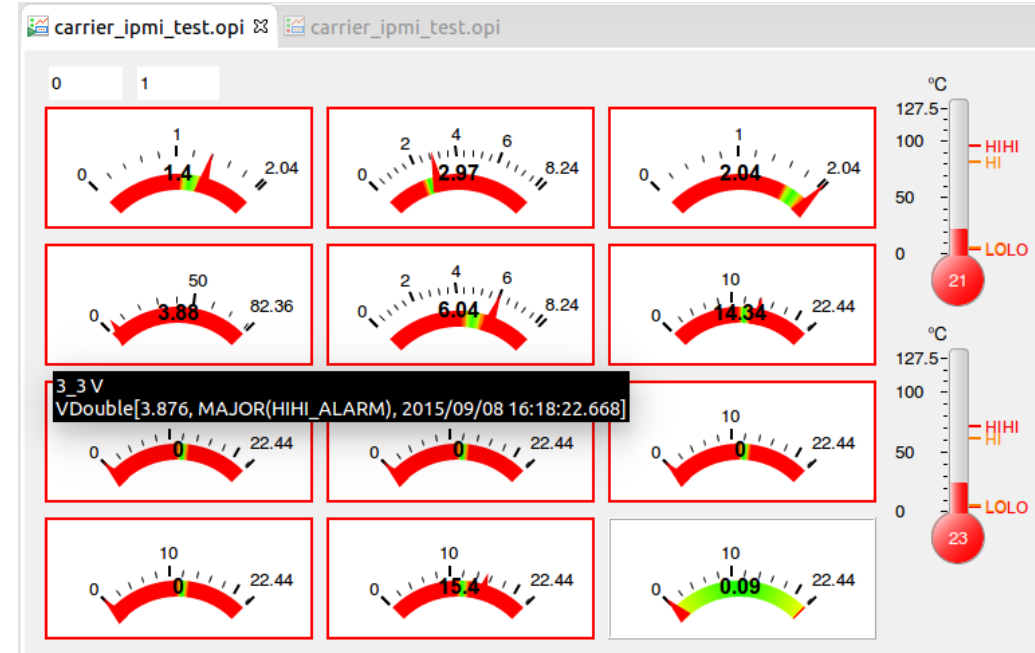


Björn Spruck for Mainz Group  
Worldwide 17.9.2015

- IPMC hardware for carrier is done
  - Firmware for carrier only operation is working
    - incl FRU states (power up/down, hot swap)
    - power negotiation
    - all sensors
    - temperature alarms (which will increase the FAN speed of the shelf or shut down the board)
- IPMI → EPICS → CSS working
- Final PSU board where the IPMC is plugged on will be ready end of october (JZ, IHEP), until then we have to live with quirks
- MMC layout done, PCB in production, prototype expected end of september.
- MMC firmware is prepared and mostly done
- MMC ↔ IPMC ↔ ShMM gives me an headache still

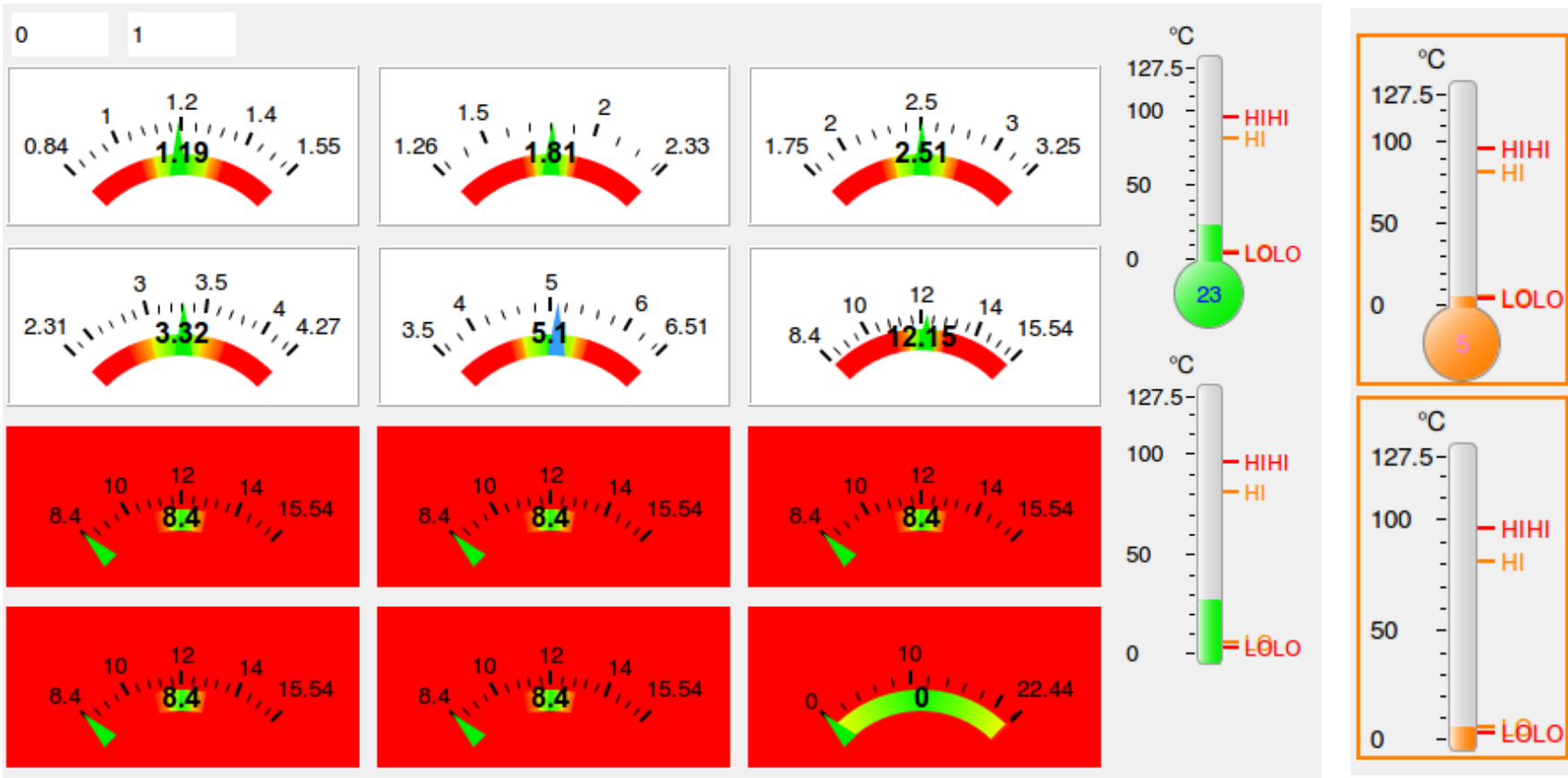
- monitoring of sensors ✓
- reading limits, min/max and determine error state ✓
- sensors which are not available (yet) ✗
  - → IOC has to be started after ALL board are power-up
  - Handling of disconnects? (sensor went to major alarm and stayed there)
  - Handling of dynamic sensor changes? (AMC board unplug)
    - Change of limits?
- Anyway, only testable when we have MMC available.
- CSS → EPICS → IPMC has to be tested (power cycle etc)
- Wishlist for now:
  - Startup with unavailable sensors
  - Correct handling of de- and reconnect

- Scales look strange with limits
- small green band is completely hidden by arrow
- blow up relevant range
- (we anyway have to map 10 bit adc value to 8 bit IPMI value)
- tested with +/-30%
- better, but still not too nice.
- (actually, I dislike the GUI items, esp the one for temperature.)

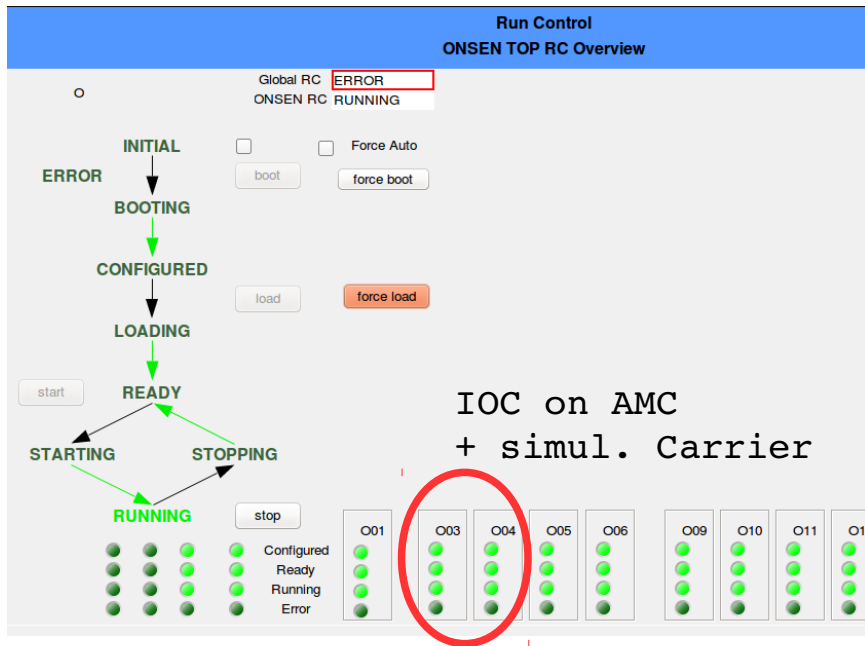


This value is 0  
but shown as lowest  
possible value

- Change colors and behaviour to make it easier to detect abnormal values.
  - Background or Fill Color → alarm sensitive
  - Pulsating alarm does not yield satisfactory results (IMO)
- How are you doing it?



- Test with a “complex” system
  - we know it works with single board and in software.
- Test RunControl with “full” shelf, 8 (AMC) boards and 34 simulated boards (25 AMCs, 9 Carrier).
  - Maximum I could acquire for a test
- Using bitstream and EPICS flash content from 2014 (KEK test)
  - Setup time consuming, as all boards need different MAC, IP and ID.
  - Changed a lot in the EPICS flash content
- Works! Boot, Load, Start, Stop → cycle
- Controlled from CSS
- Real IOC runs some “init” script on AMC
  - load, start, stop possible too



### ONSEN Overview

#### ATCA Shelf Overview

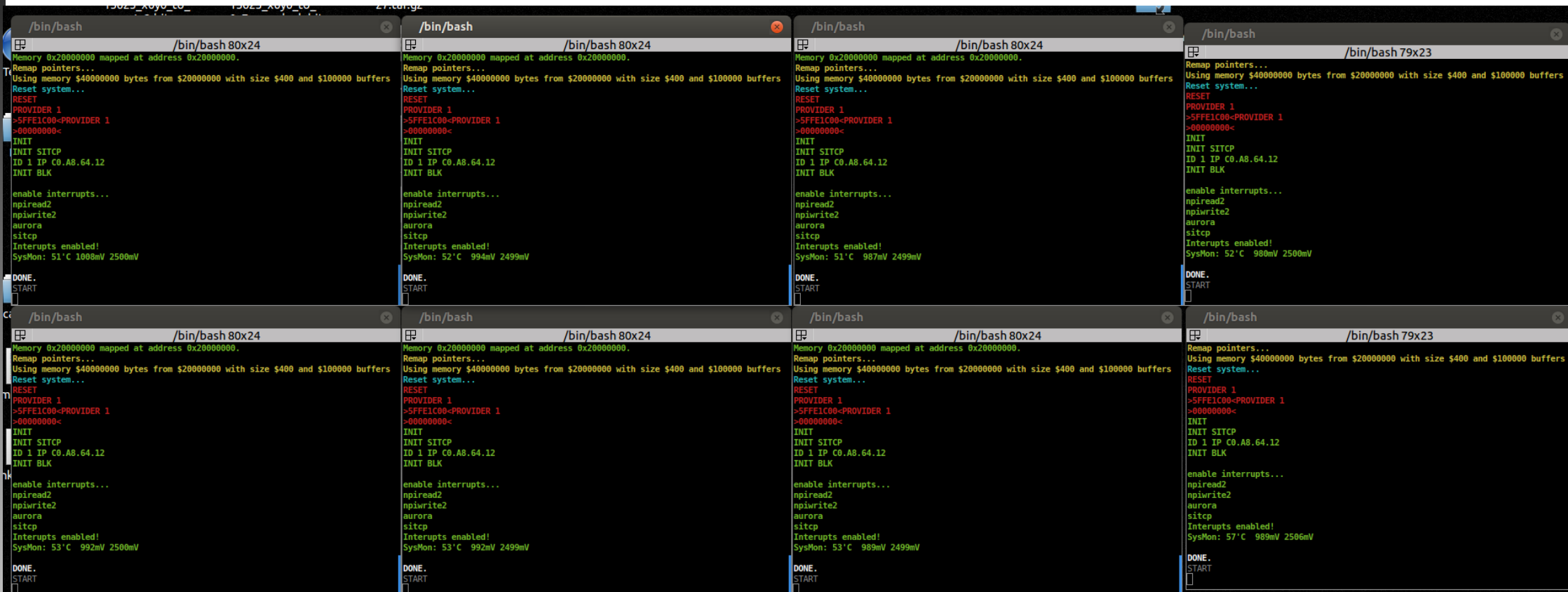
O01M	O03S	O04S	O05S	O06S	O09S	O10S	O11S	O12S
Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
H	H	H	H	H	H	H	H	H
O01MC RC	O03SC RC	O04SC RC	O05SC RC	O06SC RC	O09SC RC	O10SC RC	O11SC RC	O12SC RC
O01MT RC	O03S1 RC	O04S1 RC	O05S1 RC	O06S1 RC	O09S1 RC	O10S1 RC	O11S1 RC	O12S1 RC
	O03S2 RC	O04S2 RC	O05S2 RC	O06S2 RC	O09S2 RC	O10S2 RC	O11S2 RC	O12S2 RC
	O03S3 RC	O04S3 RC	O05S3 RC	O06S3 RC	O09S3 RC	O10S3 RC	O11S3 RC	O12S3 RC
	O03S4 RC	O04S4 RC	O05S4 RC	O06S4 RC	O09S4 RC	O10S4 RC	O11S4 RC	O12S4 RC

### ONSEN Overview

#### ATCA Shelf Overview

O01M	O03S	O04S	O05S	O06S	O09S	O10S	O11S	O12S
Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
H	H	H	H	H	H	H	H	H
O01MC RC	O03SC RC	O04SC RC	O05SC RC	O06SC RC	O09SC RC	O10SC RC	O11SC RC	O12SC RC
O01MT RC	O03S1 RC	O04S1 RC	O05S1 RC	O06S1 RC	O09S1 RC	O10S1 RC	O11S1 RC	O12S1 RC
	O03S2 RC	O04S2 RC	O05S2 RC	O06S2 RC	O09S2 RC	O10S2 RC	O11S2 RC	O12S2 RC
	O03S3 RC	O04S3 RC	O05S3 RC	O06S3 RC	O09S3 RC	O10S3 RC	O11S3 RC	O12S3 RC
	O03S4 RC	O04S4 RC	O05S4 RC	O06S4 RC	O09S4 RC	O10S4 RC	O11S4 RC	O12S4 RC

The output of the 8 IOCs on the AMC boards (by ssh)



```
Memory 0x20000000 mapped at address 0x20000000.
Remap pointers...
Using memory 40000000 bytes from 20000000 with size 400 and 100000 buffers
Reset system...
RESET
PROVIDER 1
>SFFE1C00~PROVIDER 1
>00000000<
INIT
INIT SITCP
ID 1 IP C0.A8.64.12
INIT BLK

enable interrupts...
npiread2
npiread2
npilwrite2
aurora
sitcp
Interupts enabled!
SysMon: 51'C 1000mV 2500mV

DONE.
START
```

```
Memory 0x20000000 mapped at address 0x20000000.
Remap pointers...
Using memory 40000000 bytes from 20000000 with size 400 and 100000 buffers
Reset system...
RESET
PROVIDER 1
>SFFE1C00~PROVIDER 1
>00000000<
INIT
INIT SITCP
ID 1 IP C0.A8.64.12
INIT BLK

enable interrupts...
npiread2
npiread2
npilwrite2
aurora
sitcp
Interupts enabled!
SysMon: 52'C 994mV 2499mV

DONE.
START
```

```
Memory 0x20000000 mapped at address 0x20000000.
Remap pointers...
Using memory 40000000 bytes from 20000000 with size 400 and 100000 buffers
Reset system...
RESET
PROVIDER 1
>SFFE1C00~PROVIDER 1
>00000000<
INIT
INIT SITCP
ID 1 IP C0.A8.64.12
INIT BLK

enable interrupts...
npiread2
npiread2
npilwrite2
aurora
sitcp
Interupts enabled!
SysMon: 51'C 987mV 2499mV

DONE.
START
```

```
Remap pointers...
Using memory 40000000 bytes from 20000000 with size 400 and 100000 buffers
Reset system...
RESET
PROVIDER 1
>SFFE1C00~PROVIDER 1
>00000000<
INIT
INIT SITCP
ID 1 IP C0.A8.64.12
INIT BLK

enable interrupts...
npiread2
npilwrite2
aurora
sitcp
Interupts enabled!
SysMon: 52'C 980mV 2500mV

DONE.
START
```

```
Memory 0x20000000 mapped at address 0x20000000.
Remap pointers...
Using memory 40000000 bytes from 20000000 with size 400 and 100000 buffers
Reset system...
RESET
PROVIDER 1
>SFFE1C00~PROVIDER 1
>00000000<
INIT
INIT SITCP
ID 1 IP C0.A8.64.12
INIT BLK

enable interrupts...
npiread2
npiread2
npilwrite2
aurora
sitcp
Interupts enabled!
SysMon: 53'C 992mV 2500mV

DONE.
START
```

```
Memory 0x20000000 mapped at address 0x20000000.
Remap pointers...
Using memory 40000000 bytes from 20000000 with size 400 and 100000 buffers
Reset system...
RESET
PROVIDER 1
>SFFE1C00~PROVIDER 1
>00000000<
INIT
INIT SITCP
ID 1 IP C0.A8.64.12
INIT BLK

enable interrupts...
npiread2
npilwrite2
aurora
sitcp
Interupts enabled!
SysMon: 53'C 992mV 2499mV

DONE.
START
```

```
Memory 0x20000000 mapped at address 0x20000000.
Remap pointers...
Using memory 40000000 bytes from 20000000 with size 400 and 100000 buffers
Reset system...
RESET
PROVIDER 1
>SFFE1C00~PROVIDER 1
>00000000<
INIT
INIT SITCP
ID 1 IP C0.A8.64.12
INIT BLK

enable interrupts...
npiread2
npilwrite2
aurora
sitcp
Interupts enabled!
SysMon: 53'C 989mV 2499mV

DONE.
START
```

```
Remap pointers...
Using memory 40000000 bytes from 20000000 with size 400 and 100000 buffers
Reset system...
RESET
PROVIDER 1
>SFFE1C00~PROVIDER 1
>00000000<
INIT
INIT SITCP
ID 1 IP C0.A8.64.12
INIT BLK

enable interrupts...
npiread2
npilwrite2
aurora
sitcp
Interupts enabled!
SysMon: 57'C 989mV 2506mV

DONE.
START
```



- No NSM (yet)
- If one board drops out unexpectedly, the main RC will not notice as the disconnected PV will have no influence on current state
  - When it comes back, should it automatically advance to state of other boards?
  - At least one can by do it hand now w/o/ resetting all boards.
  - Important for tests.