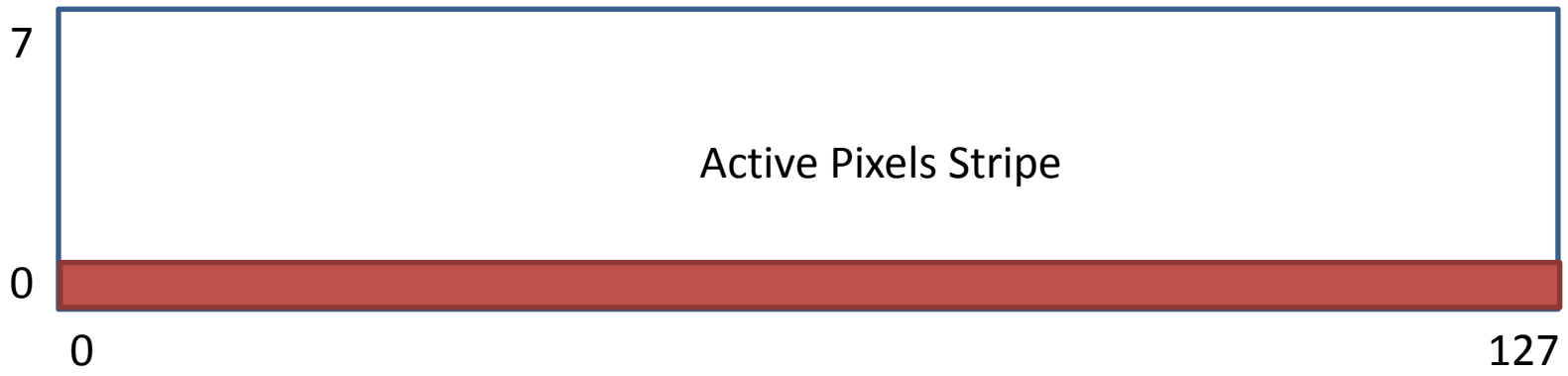
SuperPX0 “Peacemaker” cure

Test Beam 2011 Analysis Meeting

Oct. 7th 2011

Shift summary…

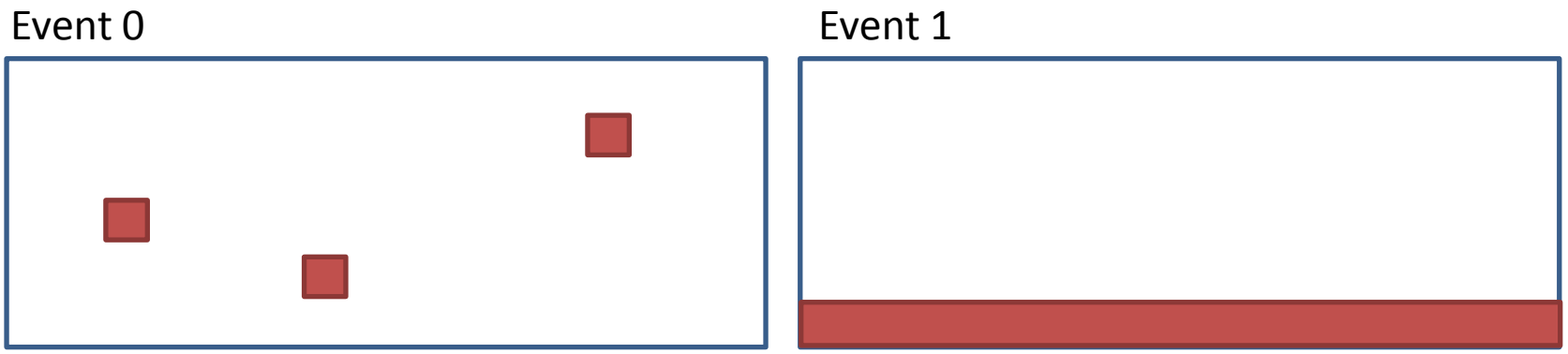
- Known bug workaround:
  - Calibrations: column couples, reset/mask after each trigger.
  - Noise/Phys. Run: 1 stripe only (8x128 pixels).
- 1st noise threshold scan:
  - Chip operable only with ¾ MIP's threshold and higher
  - If Th.< ¾ MIP: the lowest pixel row of the stripe is always turned on.



Shift summary…

- ¼ MIP's threshold: the hot-row is self sustaining. Once it starts it never ends.
- Th $\longrightarrow$ (¾ MIP) $^{-}$: Sometimes the hot-row appears, sometimes not.

The hot-row activates after a first good matrix sweep:

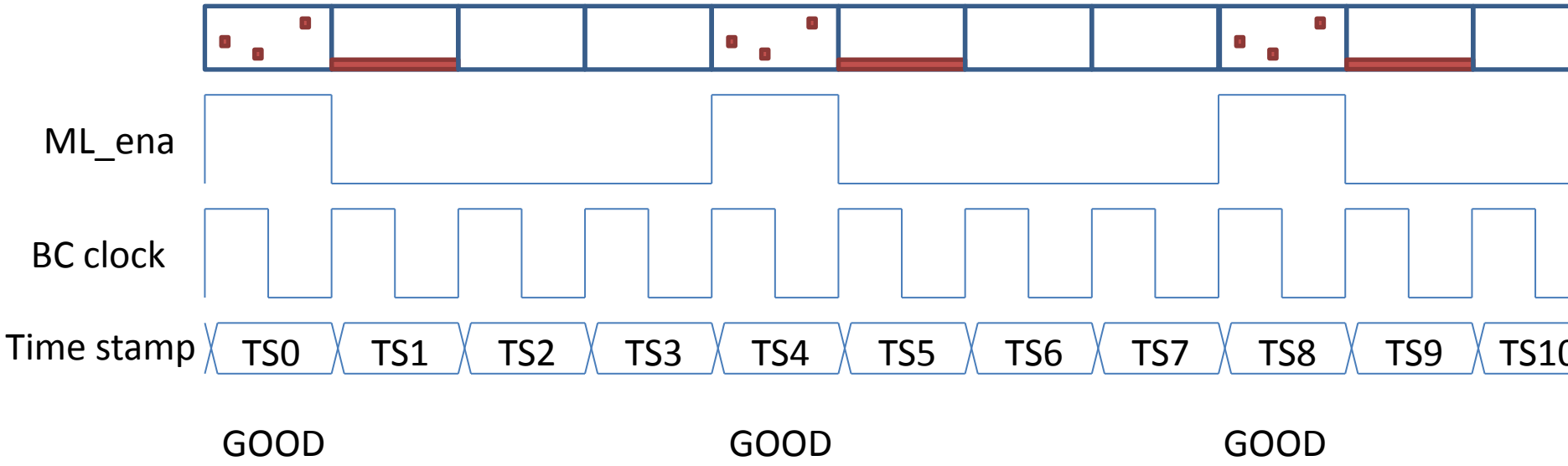


Peacemaker Cure

- In calibration this effect was never observed
  - We reset the chip after each trigger! (we always get only event 0)
- We cannot reset the chip after each BCO (long masking procedure)

BUT:

- We can emulate the reset effect over matrix (hit clean-up) without resetting the periphery:
  - The readout sweeps the matrix when pixels are not active (ML_ena low)
  - Recursive pixel enabled/disabled cycles



Conclusions

Neat Effects:

- Good data only in events with TS%4 == 0
- Efficiency should be scaled by a factor of **4** w.r.t. full active-time run.

Achievements:

- The chip seamed to work properly at ¼ MIP's threshold.

"When you have to shoot, shoot, don't talk".