

- Writing only dirty lines yields cheap checkpoints:

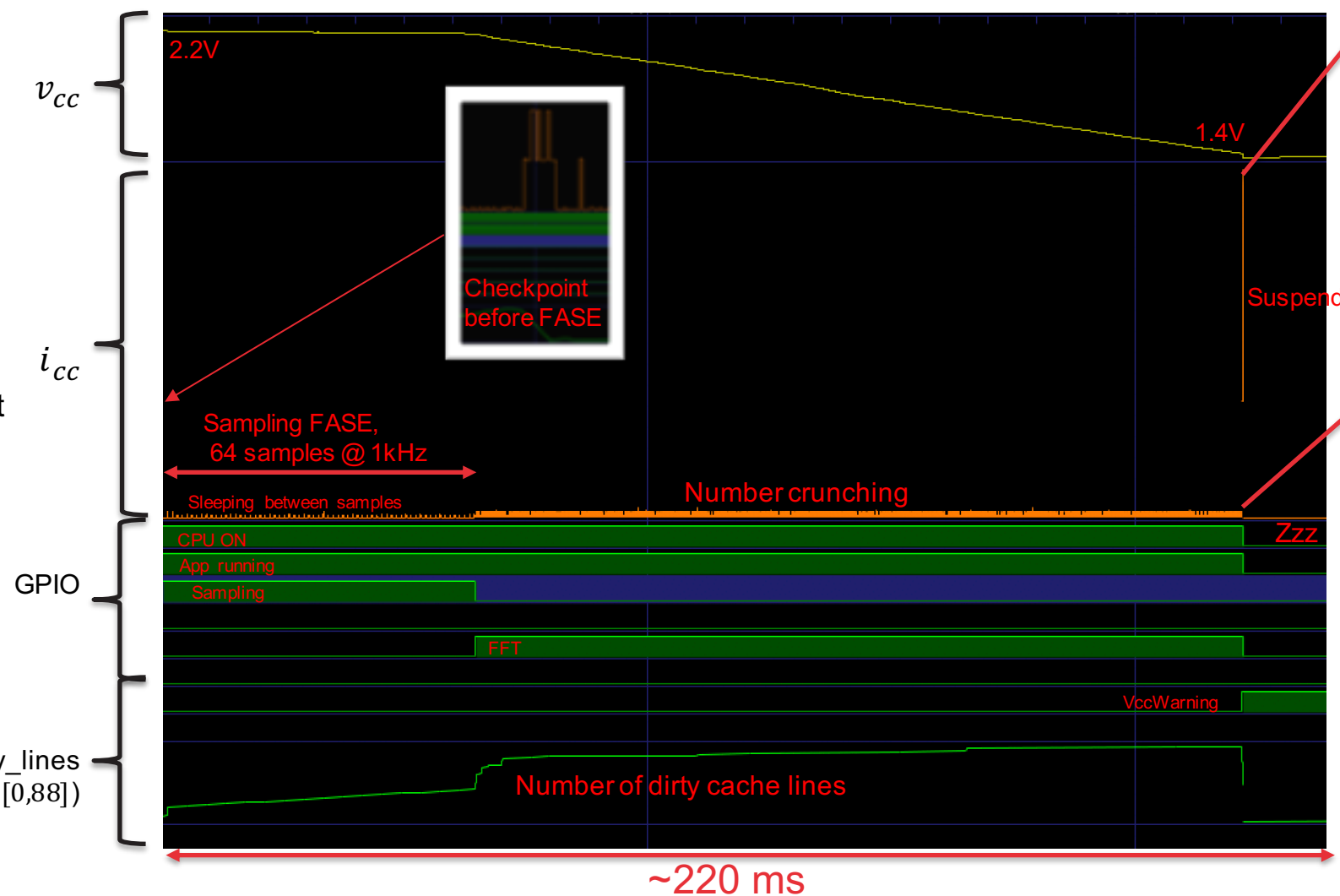
- $\sim 80 \mu\text{s}$
- $\sim 0.03\text{V}$  vcc drop
- could substantially reduce **VON** and **VSUSPEND** threshold

- No explicit restore operation (except for peripherals)

#### Experimental setup:

- Cortex M0 CPU model
- $2 \mu\text{W}$  power supply
- $2 \mu\text{F}$  capacitor
- $f_{\text{clk}} = 1\text{MHz}$
- 64 kB instruction MRAM
- 8 kB data MRAM
- 1 kB write-through i\$
- 1 kB write-back d\$

dcache.dirty\_lines  
( $\in [0,88]$ )



\*ps. absolute icc values are a bit meaningless (needs LP filtering), look at vcc drop instead