



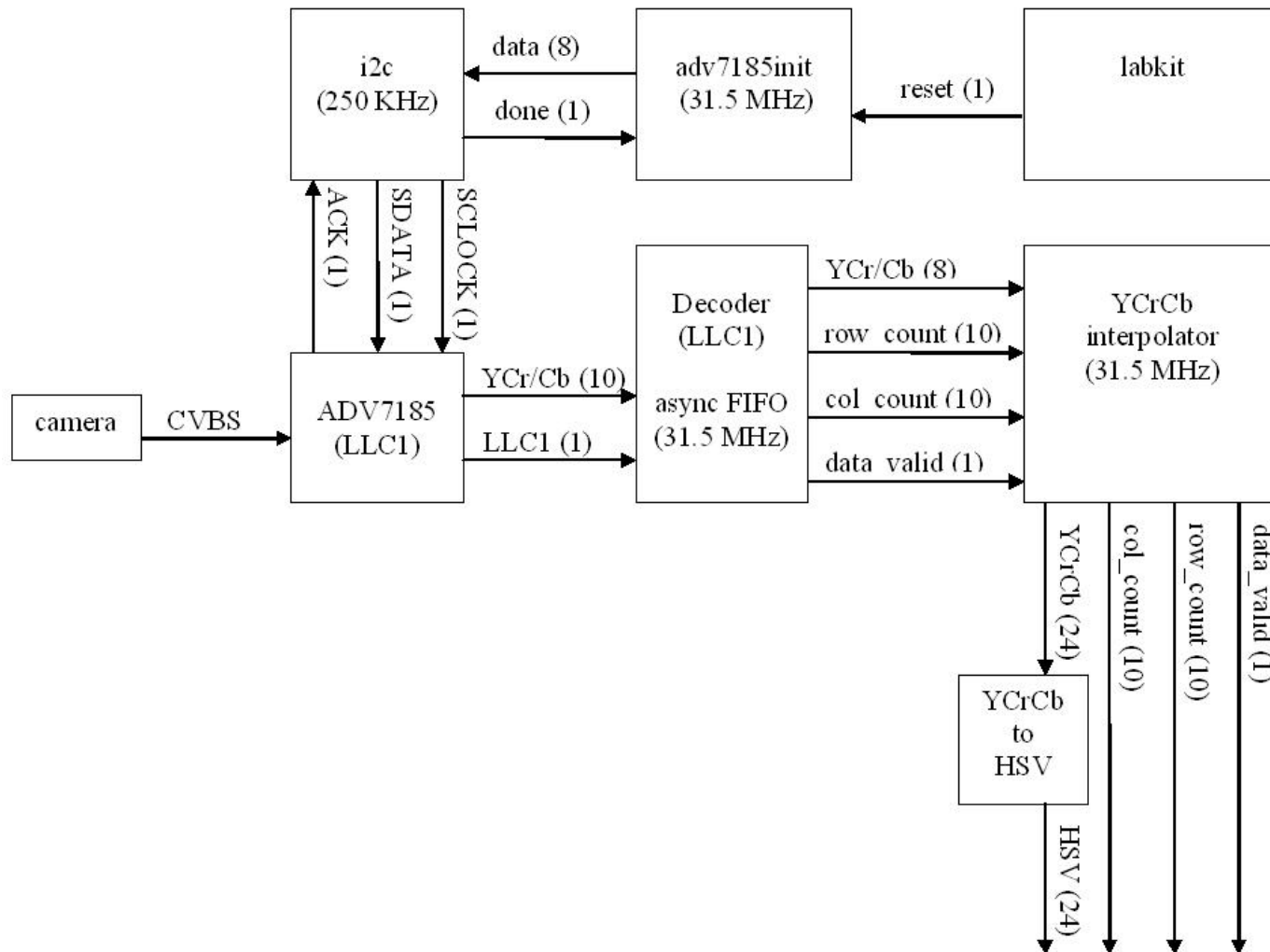
1984

An Object Tracking
Surveillance System

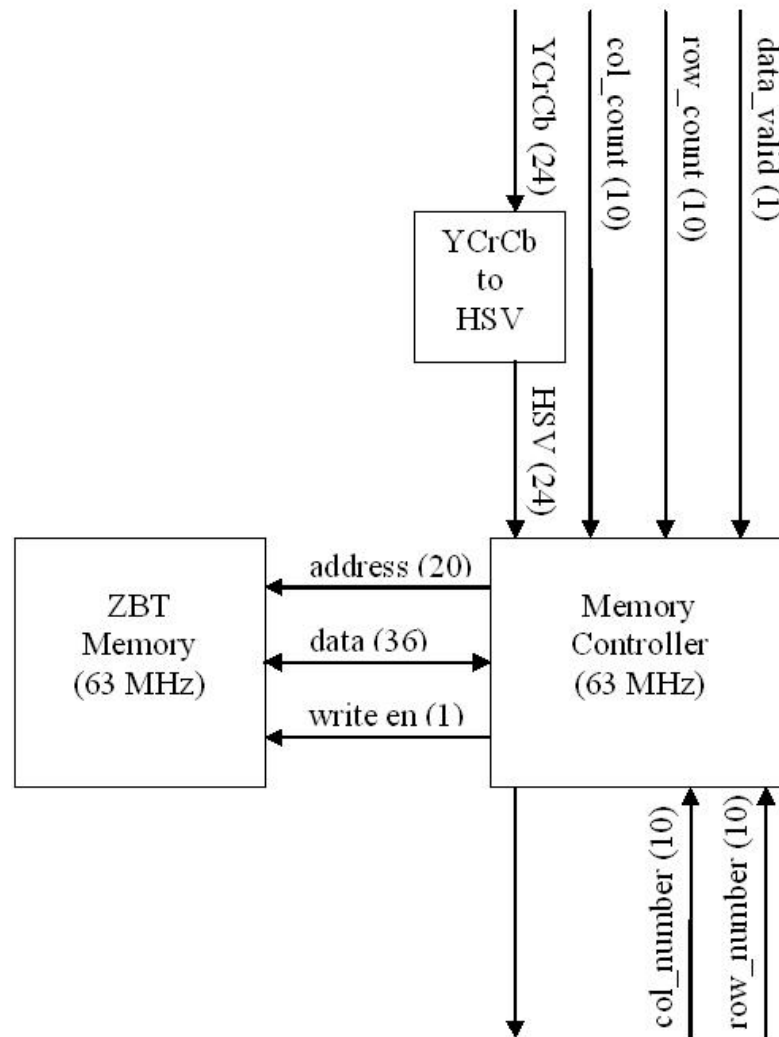
Goals

- Decode and buffer NTSC signal
- Locate laser pointer within the camera's field of view
- Track motion of laser pointer
- Identify target
- Track motion of target

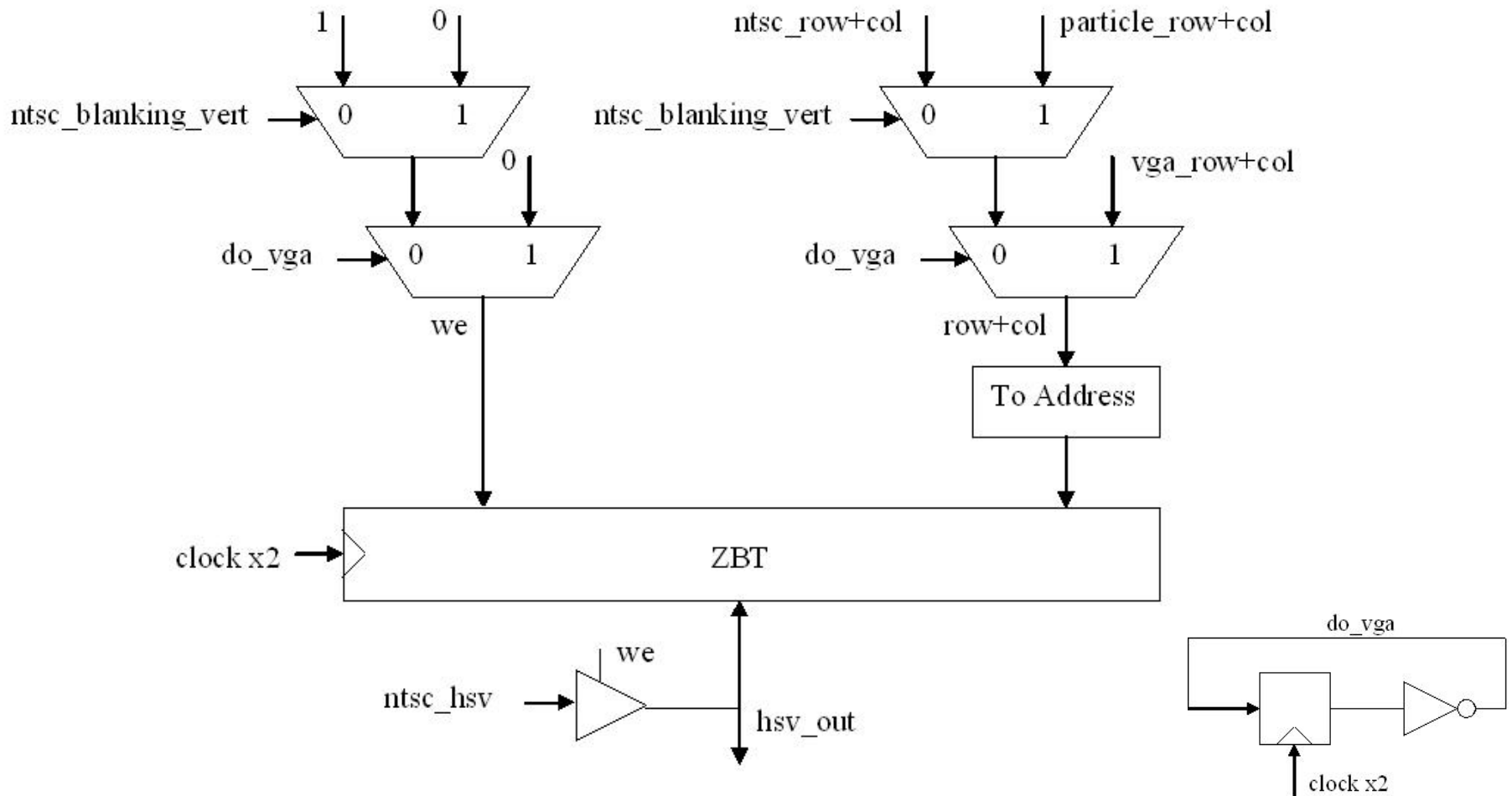
NTSC Camera Interface



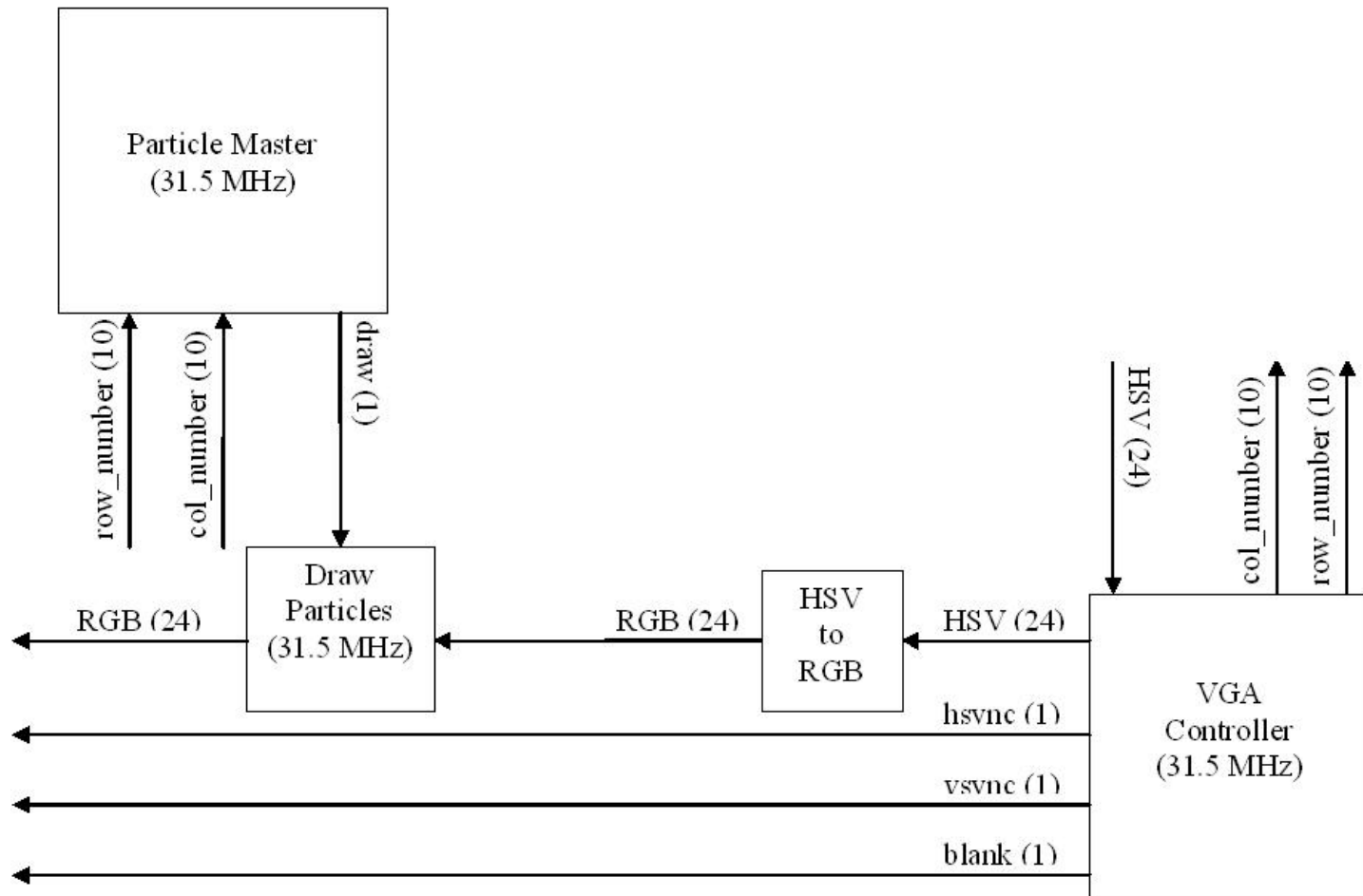
Memory Controller



Memory Controller Detail



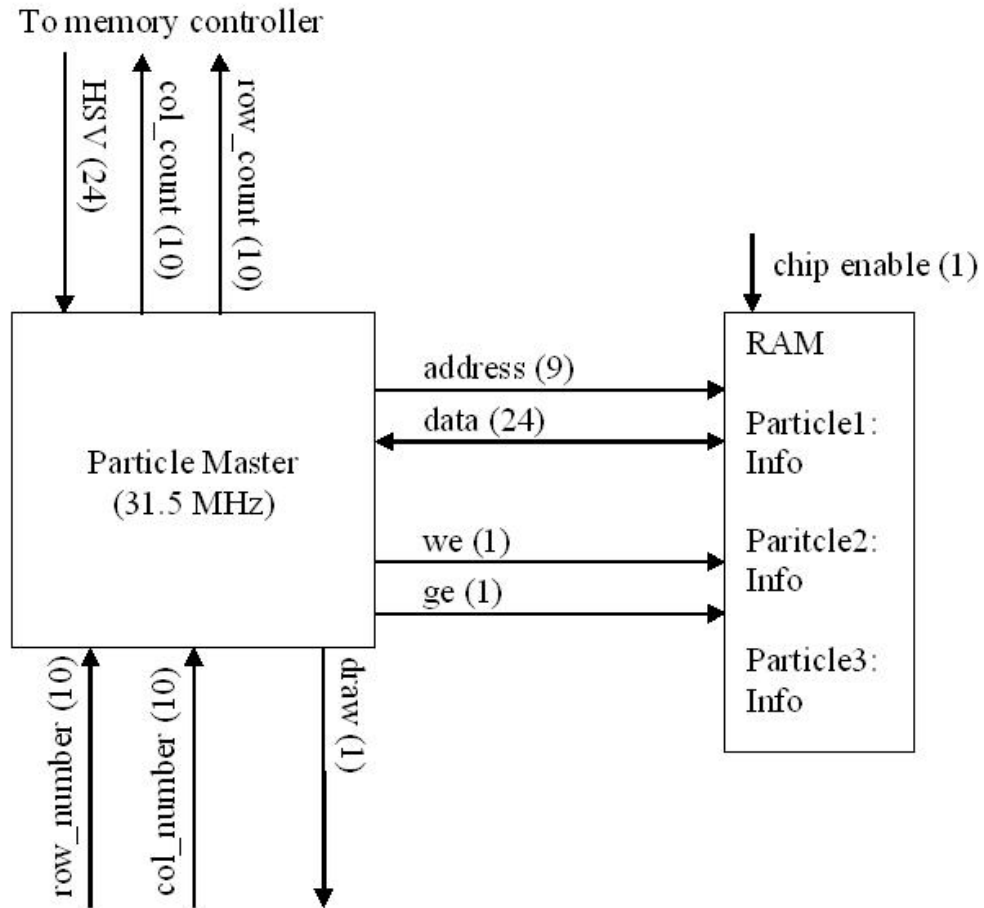
VGA Output



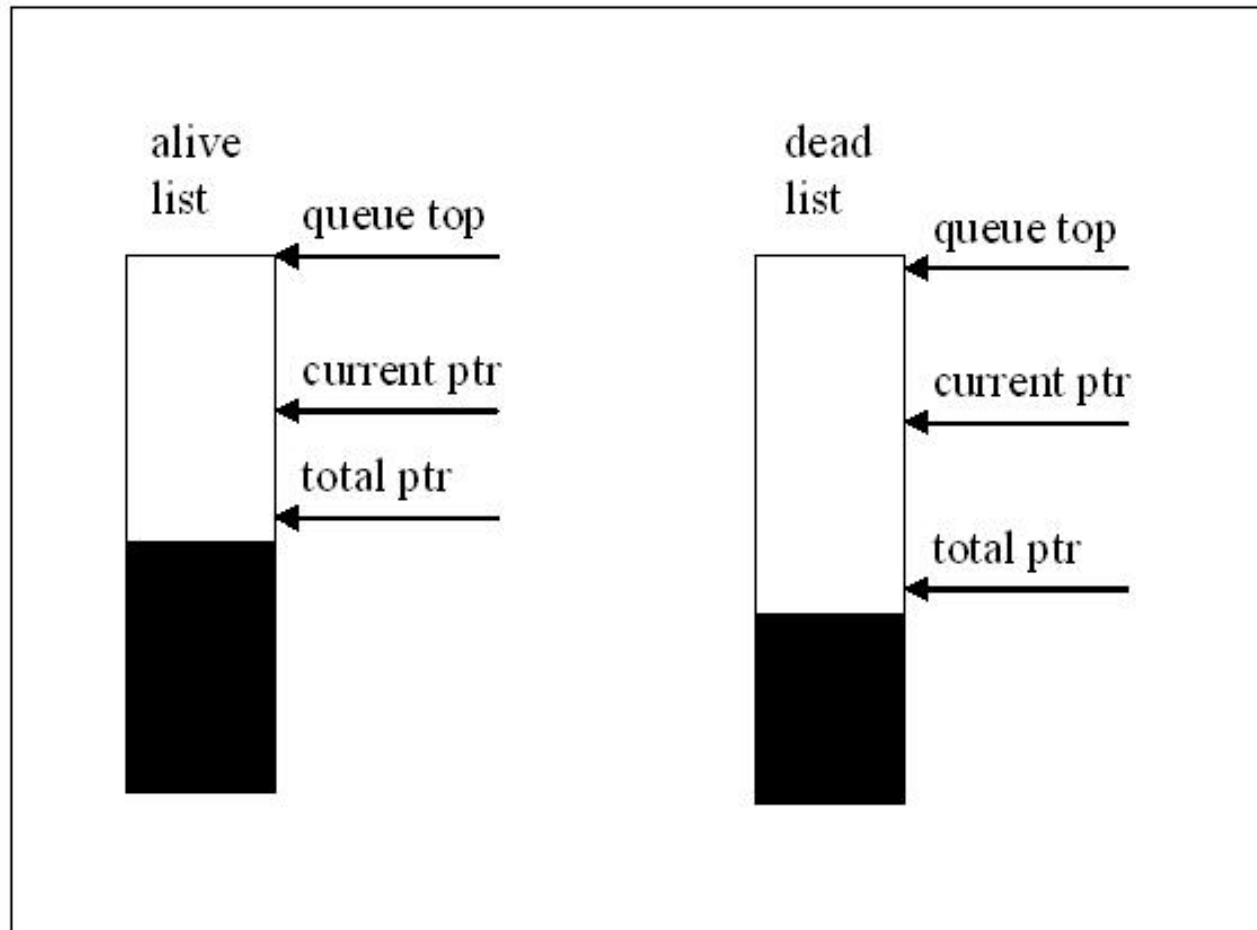
Particle Filter

- Each particle has position, velocity, and assigned color
- Each frame
 - if a particle contains its assigned color, it lives
 - else, it is removed
- Maintain a constant number by spawning a new one whenever one is removed
- Survival of the “Fittest”

Particle Filter



Particle Master





06:07

▶ WAT 0

▶ MAN U 0





Questions?