getpixel (FSM)

Origin
inv = 1'b0

Inverse
inv = 1'b1

inv_deb

inv_deb

⊗

North
addr = {pixelV, pixelH}

rot_deb

East
addr = {~pixelH, pixelV}

rot_deb

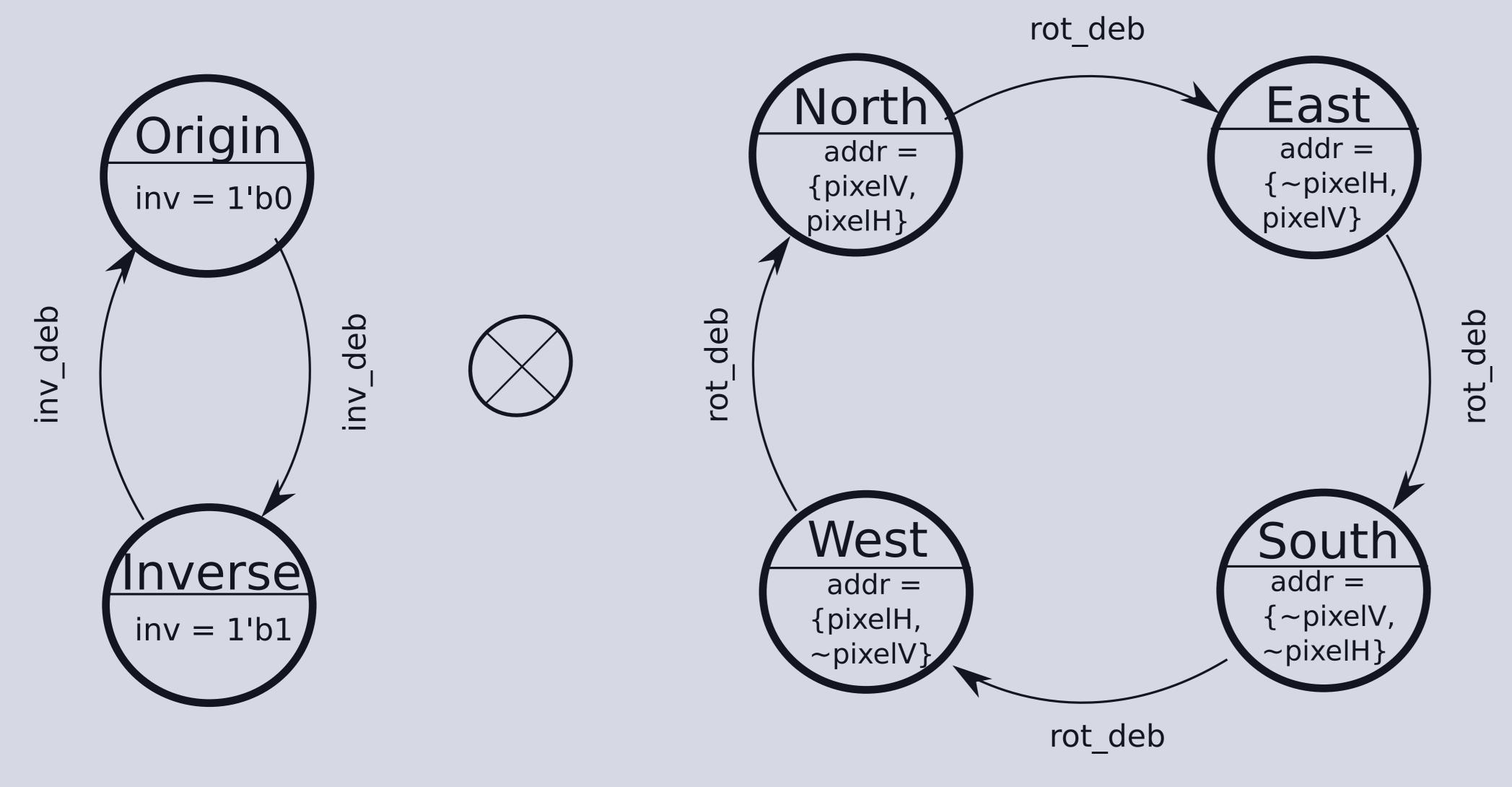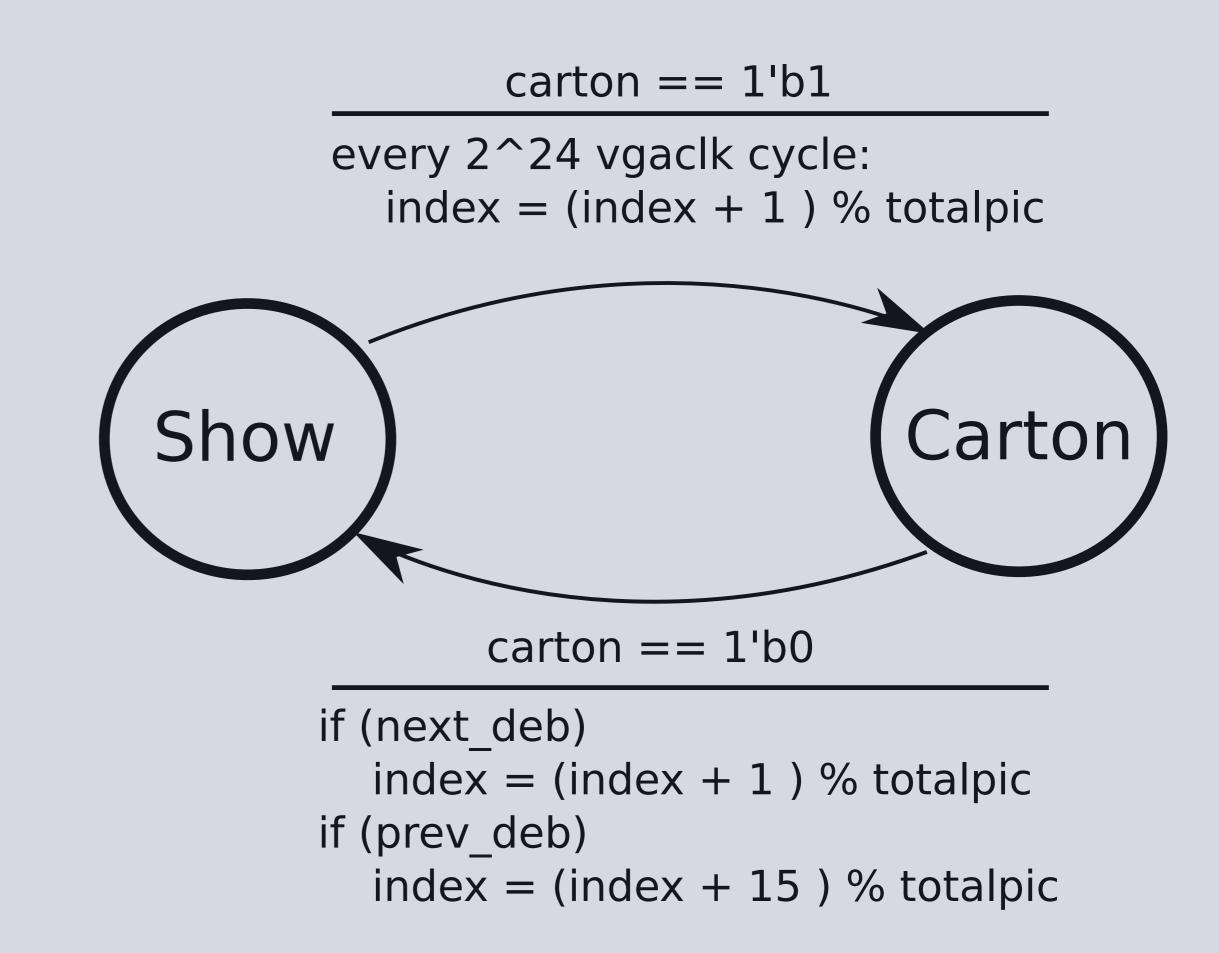**South**
addr = {~pixelV, ~pixelH}

rot_deb

West
addr = {pixelH, ~pixelV}

rot_deb

Moore Machine
Two decoupled sub-state-machines
There are 2*4 = 8 states in this machine

selectpic (FSM)

Show

Carton

carton == 1'b1
every 2^24 vgaclk cycle:
   index = (index + 1) % totalpic

carton == 1'b0
if (next_deb)
   index = (index + 1) % totalpic
if (prev_deb)
   index = (index + 15) % totalpic

Mealey Machine