Camera interface

greenFull
greenWrite
greenData
if even

greenFifo
single clk
size W

clk

greenEmpty
greenRead

G1

pixclk

clk

if even

COL

if even

ROW

data[11:0]

if odd

COL

if odd

redData
redWrite
redFull

redFifo
single clk
size W

redEmpty
redRead

R

merge to pixel

pixelData[15:0]

pixelWrite

pixelFull

B

B

G2

G2

nReset

enableCam

lval

fval

frameActive

even

PRE_ROW_EVEN   lval = 1   ROW_EVEN

fval = 0

lval = 0   INACTIVE   lval = 0

fval = 1

fval = 0

ROW_ODD   lval = 1   PRE_ROW_ODD

odd

odd

COL_ODD

lval = 1

lval = 0

INACTIVE   lval = 1   lval = 1

lval = 0

COL_EVEN

even

green/redWrite := enableCam = 1 and nReset = 1 and fval = 1 and lval = 1 and row = even and col = odd/even and green/redFull = 0
green/redRead := enableCam = 1 and nReset = 1 and fval = 1 and lval = 1 and row = odd and col = odd and green/redEmpty = 0
pixelWrite := enableCam = 1 and nReset = 1 and fval = 1 and lval = 1 and row = odd and col = even and pixelFull = 0