

Syn_flush/

remove=0/

FSM For Read Logic

remove=1&&empty=0

empty=1
read_enabel=0
read_addr=7'b0
rptr=8'b0
data_out=0

empty=1
read_enabel=0
read_addr=7'b0
rptr=8'b0
data_out=0

remove=1&&empty=0

data_out=data_in
read_enabel=1
rptr=previous pointer value+1'b1
read_addr=previous address value+1'b1

data_out=data_in
read_enabel=1
rptr=previous pointer value+1'b1
read_addr=previous address value+1'b1

!reset/

empty=1
read_enabel=0
read_addr=7'b0
rptr=8'b0
data_out=0

idle

s0

rptr=8'b1/

rptr=8'b0

remove=1&&empty=0

data_out=data_in
read_enabel=1
rptr=previous pointer value+1'b1
read_addr=previous address value+1'b1

remove=0||empty=1

read_enabel=0
data_out=0
read_addr=7'b0
rptr=8'b0

s1

remove=0||empty=1

read_enabel=0
data_out=0
read_addr=7'b0
rptr=8'b0

