htrans ⟶

hsel ⟶

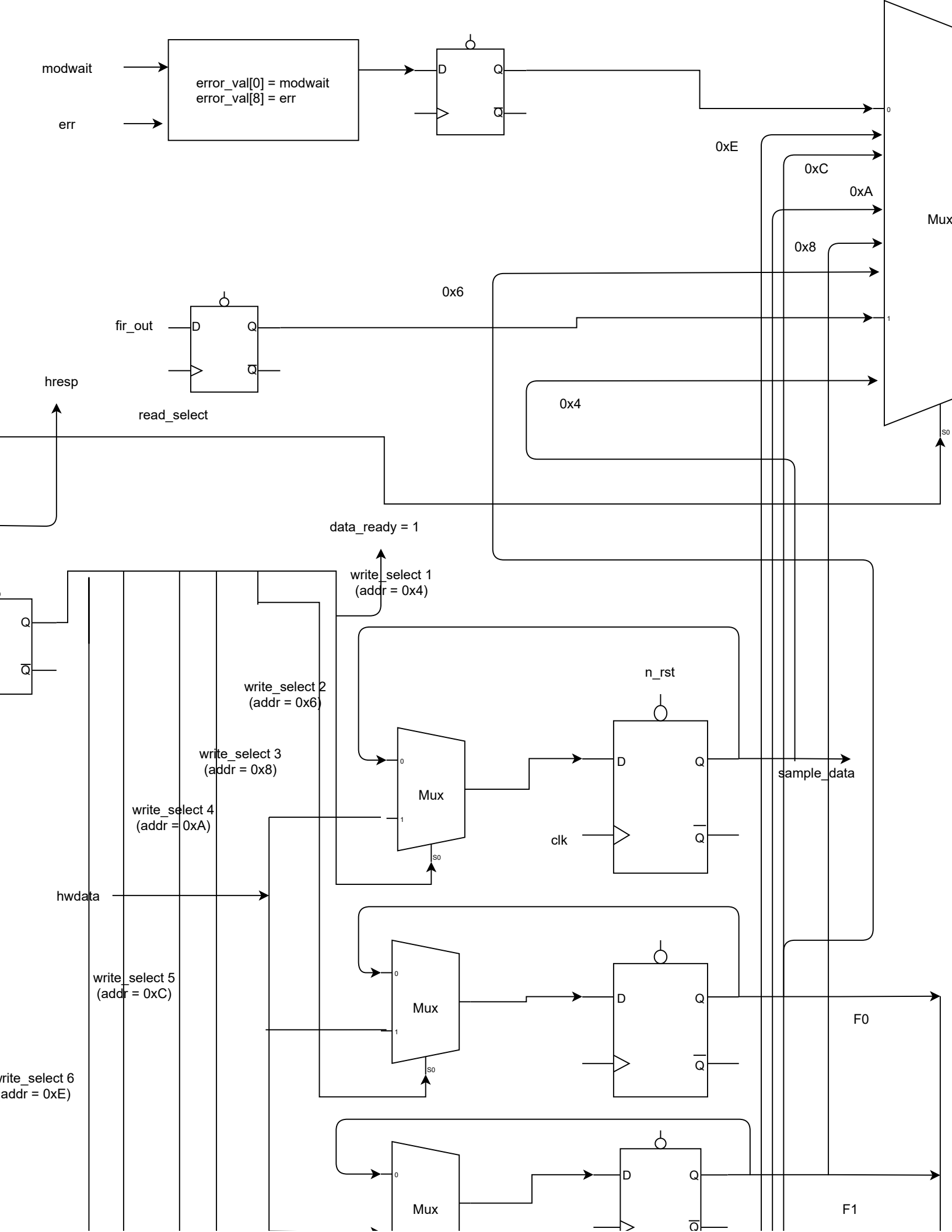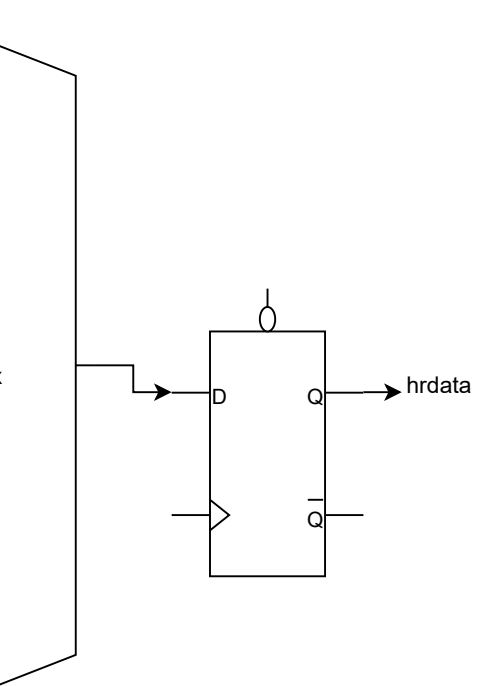haddr ⟶          Address Mapping
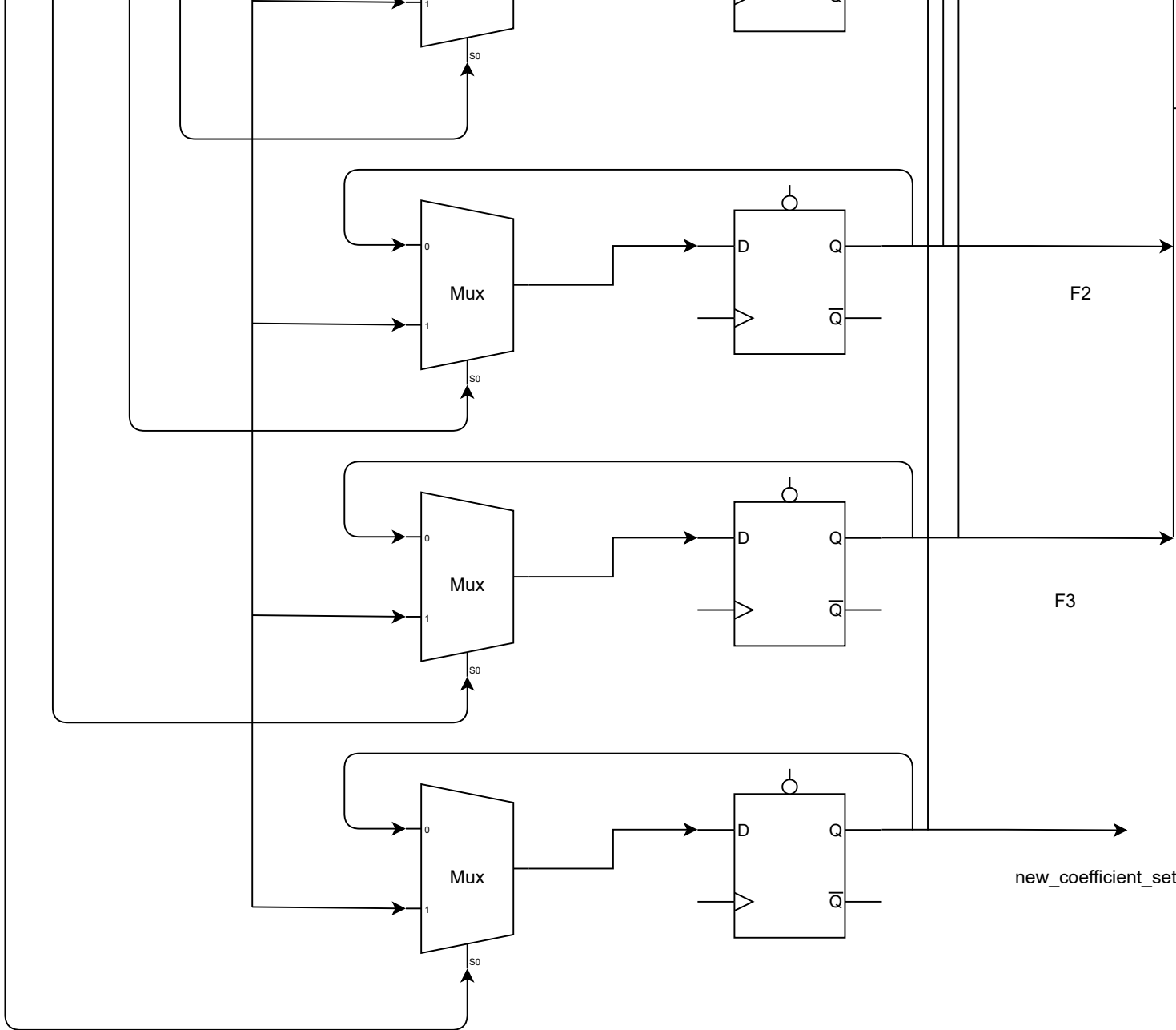
hwrite ⟶

coeff_num ⟶

D

ADDRESS MAPPING:

if (hsel && !hwrite)
  read_select = haddr
else if (hsel&& hwrite)
  if (haddr == 0x4)
    write = write_select 1
  else if (haddr == 0x6)
    write = write_select 2
  else if (haddr == 0x8)
    write = write_select 3
  else if (haddr == 0xA)
    write = write_select 4
  else if (haddr == 0xC)
    write = write_select 5
  else if (haddr == 0xE)
    write = write_select 6

modwait

err

error_val[0] = modwait
error_val[8] = err

D    Q

Q

0xE

0xC

0xA

0x8

0x6

Mux

fir_out    D    Q

Q

hresp

read_select

0x4

S0

data_ready = 1

write_select 1
(addr = 0x4)

Q

Q

n_rst

write_select 2
(addr = 0x6)

write_select 3
(addr = 0x8)

0

Mux

D    Q

write_select 4
(addr = 0xA)

1

sample_data

hwdata

clk    >    Q

S0

write_select 5
(addr = 0xC)

0

Mux

D    Q

1

F0

>    Q

write_select 6
(addr = 0xE)

S0

0

Mux

D    Q

F1

>    Q

hrdata

F2

F3

new_coefficient_set

Mux

Mux

Mux

0

1

0

1

0

1

S0

S0

S0

D

Q

Q

D

Q

Q

D

Q

Q

$\longrightarrow$ fir_coefficient