MP3 Datapath Signals

Name	Type	Stage	Origin	Destination
pc_out	rv32i_word	FETCH	PC	IF_ID
pcmux_out	rv32i_word	FETCH	pcmux	PC
pcmux_sel	pcmux_sel_t	FETCH	EX_MEM	pcmux
instr_addr	logic [31:0]	FETCH	PC	I-Cache
instr_rdata	logic [31:0]	FETCH	I-Cache	IF_ID
instr_read	logic	FETCH	Set to 1'b1	I-Cache
instr_byte_enable	logic [3:0]	FETCH	Set to 4'b1111	I-Cache
mem_iresp	logic	FETCH	I-Cache	IF_ID
rom_instr	logic [31:0]	DECODE	IF_ID	ROM
ctrl	rv32i_control_word	DECODE	ROM	ID_EX
rs1	rv32i_reg	DECODE	ROM	REGFILE
rs2	rv32i_reg	DECODE	ROM	REGFILE
rd	rv32i_reg	DECODE	ROM	REGFILE
rs1_out	rv32i_word	DECODE	REGFILE	ID_EX
rs2_out	rv32i_word	DECODE	REGFILE	ID_EX
aluop	alu_ops	EXECUTE	ID_EX	ALU
cmpop	branch_funct3_t	EXECUTE	ID_EX	CMP
alumux1_sel	alumux1_sel_t	EXECUTE	ID_EX	alumux1
alumux2_sel	alumux2_sel_t	EXECUTE	ID_EX	alumux2
cmpmux_sel	cmpmux_sel_t	EXECUTE	ID_EX	cmpmux
alumux1_out	rv32i_word	EXECUTE	alumux1	ALU
alumux2_out	rv32i_word	EXECUTE	alumux2	ALU
cmpmux_out	rv32i_word	EXECUTE	cmpmux	CMP

i_imm	rv32i_word	EXECUTE	ID_EX	alumux2, cmpmux
u_imm	rv32i_word	EXECUTE	ID_EX	alumux2
b_imm	rv32i_word	EXECUTE	ID_EX	alumux2
s_imm	rv32i_word	EXECUTE	ID_EX	alumux2
j_imm	rv32i_word	EXECUTE	ID_EX	alumux2
pc_out	rv32i_word	EXECUTE	ID_EX	alumux1
rs1_out	rv32i_word	EXECUTE	ID_EX	alumux1, CMP
rs2_out	rv32i_word	EXECUTE	ID_EX	alumux2, cmpmux
ctrl	rv32i_control_word	EXECUTE	ID_EX	EX_MEM
alu_out	rv32i_word	EXECUTE	ALU	EX_MEM
br_en	rv32i_word	EXECUTE	CMP	EX_MEM
alu_out	rv32i_word	MEMORY	EX_MEM	ID_EX, MEM_WB
cmp_out	rv32i_word	MEMORY	EX_MEM	MEM_WB
br_en	rv32i_word	MEMORY	EX_MEM	ID_EX
mem_read	logic	MEMORY	EX_MEM	D-Cache
mem_write	logic	MEMORY	EX_MEM	D-Cache
mem_rdata	rv32i_word	MEMORY	EX_MEM	D-Cache
mem_wdata	rv32i_word	MEMORY	D-Cache	MEM_WB
mem_byte_enable	logic [3:0]	MEMORY	EX_MEM	D-Cache
mem_dresp	logic	MEMORY	D-Cache	MEM_WB
ctrl	rv32i_control_word	MEMORY	EX_MEM	MEM_WB
regfilemux_sel	regfilemux_sel_t	WRITEBACK	MEM_WB	regfilemux
regfilemux_out	rv32i_word	WRITEBACK	regfilemux	REGFILE
alu_out	rv32i_word	WRITEBACK	MEM_WB	regfilemux

cmp_out	rv32i_word	WRITEBACK	MEM_WB	regfilemux
u_imm	rv32i_word	WRITEBACK	MEM_WB	regfilemux
mem_data	rv32i_word	WRITEBACK	MEM_WB	regfilemux
rs1_out	rv32i_word	WRITEBACK	REGFILE	ID_EX
rs2_out	rv32i_word	WRITEBACK	REGFILE	ID_EX