PE Instruction Set

31:28	27	26:24	23:16	15:8	7:0
res	wb	opcode	waddr	raddr1	raddr0

res: reserved
wb: write back signal
opcode: complex operation code
waddr: write address of the data memory
raddr1: read address 1 of the data memory
raddr0: read address 0 of the data memory

Opcode:

000	001	010	011	101	110	111
LOAD	ADD	SUB	MUL	MAX	MULSUB	MULADD

All of the above are complex operations. (e.g. ADD: (a+jb) + (c+jd))

Examples:

Operations	Instructions in Hex
MUL R1, R0 (WB)	32'h07_80_01_00
MUL R3, R2 (WB)	32'h07_81_03_02
MUL R5, R4 (WB)	32'h07_82_05_04
ADD R129, R128	32'h01_83_81_80