Befehlssatz des D·CORE Prozessors

Mnemonic	Codierung	Hex	Bedeutung
			ALU-Operationen
mov	0010 0000 ⟨yyyy⟩ ⟨xxxx⟩	20yx	R[x] = R[y]
addu	0010 0001 ⟨yyyy⟩ ⟨xxxx⟩	21yx	R[x] = R[x] + R[y]
addc	0010 0010 ⟨yyyy⟩ ⟨xxxx⟩	22yx	R[x] = R[x] + R[y] + C (updates C)
subu	0010 0011 ⟨yyyy⟩ ⟨xxxx⟩	23yx	R[x] = R[x] - R[y]
and	0010 0100 ⟨yyyy⟩ ⟨xxxx⟩	24yx	R[x] = R[x] AND R[y] (bitwise)
or	0010 0101 ⟨yyyy⟩ ⟨xxxx⟩	25yx	R[x] = R[x] OR R[y] (bitwise)
xor	0010 0110 ⟨yyyy⟩ ⟨xxxx⟩	26yx	R[x] = R[x] XOR R[y] (bitwise)
not	0010 0111 ⟨****⟩ ⟨xxxx⟩	27*x	R[x] = NOT R[x] (bitwise)
			Shift-Operationen
lsl	0010 1000 ⟨yyyy⟩ ⟨xxxx⟩	28yx	R[x] = R[x] « R[y].<3:0>
lsr	0010 1001 ⟨yyyy⟩ ⟨xxxx⟩	29yx	R[x] = R[x] »> R[y].<3:0>
asr	0010 1010 ⟨yyyy⟩ ⟨xxxx⟩	2Ayx	R[x] = R[x] » R[y].<3:0>
lslc	0010 1100 ⟨****⟩ ⟨xxxx⟩	2C*x	R[x] = R[x] « 1, C=R[X].15
lsrc	0010 1101 ⟨****⟩ ⟨xxxx⟩	2D*x	R[x] = R[x] »> 1, C=R[X].0
asrc	0010 1110 ⟨****⟩ ⟨xxxx⟩	2E*x	R[x] = R[x] » 1, C=R[X].0
			Vergleichs-Operationen
cmpe	0011 0000 ⟨yyyy⟩ ⟨xxxx⟩	30yx	C = (R[x] == R[y])
cmpne	0011 0001 ⟨yyyy⟩ ⟨xxxx⟩	31yx	C = (R[x] != R[y])
cmpgt	0011 0010 ⟨yyyy⟩ ⟨xxxx⟩	32yx	C = (R[x] > R[y]) (signed)
cmplt	0011 0011 ⟨yyyy⟩ ⟨xxxx⟩	33yx	C = (R[x] < R[y]) (signed)
			Immediate-Operationen
movi	0011 0100 ⟨cccc⟩ ⟨xxxx⟩	34cx	R[x] = 0x000c
addi	0011 0101 ⟨cccc⟩ ⟨xxxx⟩	35cx	R[x] = R[x] + 0x000⟨c⟩
subi	0011 0110 ⟨cccc⟩ ⟨xxxx⟩	36cx	R[x] = R[x] - 0x000⟨c⟩
andi	0011 0111 ⟨cccc⟩ ⟨xxxx⟩	37cx	R[x] = R[x] AND 0x000⟨c⟩
lsli	0011 1000 ⟨cccc⟩ ⟨xxxx⟩	38cx	R[x] = R[x] « ⟨c⟩
lsri	0011 1001 ⟨cccc⟩ ⟨xxxx⟩	39cx	R[x] = R[x] »> ⟨c⟩
bseti	0011 1010 ⟨cccc⟩ ⟨xxxx⟩	3Acx	R[x] = R[x] | (1 « ⟨c⟩) (set bit)
bclri	0011 1011 ⟨cccc⟩ ⟨xxxx⟩	3Bcx	R[x] = R[x] & !(1 « ⟨c⟩) (clear bit)
			Speicher-Operationen
ldw	0100 ⟨cccc⟩ ⟨yyyy⟩ ⟨xxxx⟩	4cyx	`R[x] = MEM( R[y] + (0x000⟨c⟩<<1) )`
stw	0101 ⟨cccc⟩ ⟨yyyy⟩ ⟨xxxx⟩	5cyx	`MEM( R[y] + (0x000⟨c⟩<<1) ) = R[x]`
			Kontrollfluss
br	1000 ⟨iiii⟩ ⟨iiii⟩ ⟨iiii⟩	8iii	PC = PC+2+⟨imm12⟩
jsr	1001 ⟨iiii⟩ ⟨iiii⟩ ⟨iiii⟩	9iii	R[15] = PC+2; PC = PC+2+⟨imm12⟩ (call)
bt	1010 ⟨iiii⟩ ⟨iiii⟩ ⟨iiii⟩	Aiii	(C=1) ? PC = PC+2+⟨imm12⟩ : PC=PC+2
bf	1011 ⟨iiii⟩ ⟨iiii⟩ ⟨iiii⟩	Biii	(C=0) ? PC = PC+2+⟨imm12⟩ : PC=PC+2
jmp	1100 ⟨****⟩ ⟨****⟩ ⟨xxxx⟩	C**x	PC = R[x]
halt	1111 ⟨****⟩ ⟨****⟩ ⟨****⟩	F***	halt **andere Opcodes illegal**

⟨xxxx⟩, x:	4-bit Index des Quell- und Zielregisters RX	⟨xxxx⟩ – binär, x – hex
⟨yyyy⟩, y:	4-bit Index des Quellregisters RY	⟨yyyy⟩ – binär, y – hex
⟨cccc⟩, c:	4-bit Konstante IMM4	⟨cccc⟩ – binär, c – hex
iii:	12-bit sign-extended Konstante IMM12	⟨iiii⟩ – binär, i – hex
⟨****⟩, *:	don't care	