NACHI Reference Data

CORE INSTRUCTION SET

NAME, MNEMONIC	FOR-MAT	OPERATION	OPCODE /FUNCT (HEX)
Add (add)	R	R[rd] = R[rs] + R[rt]	0/20
Add Immediate (addi)	I	R[rt] = R[rs] + SignExtImm	8
Branch On Equal (beq)	I	if(R[rs]==R[rt]) PC=PC+4+BranchAddr	4
Jump (j)	J	PC=JumpAddr	2
Load Word (lw)	I	R[rt] = M[R[rs]+SignExtImm]	23
Or (or)	R	R[rd] = R[rs] | R[rt]	0/25
Set Less Than (slt)	R	R[rd] = (R[rs] < R[rt]) ? 1 : 0	0/2a
Store Word (sw)	I	M[R[rs]+SignExtImm] = R[rt]	2b

BASIC INSTRUCTION FORMATS

R (Register) Format:

Opcode (6)	Rs (5)	Rt (5)	Rd (5)	Shamt (5)	Funct (6)

I (Immediate) Format:

Opcode (6)	Rs (5)	Rt (5)	Sign Extension /Immediate (16)

J (Jump) Format:

Opcode (6)	Address (26)

REGISTER NAME, NUMBER, USE, CALL CONVENTION

NAME	NUMBER	USE	PRESERVED ACROSS A CALL?
$zero	0	The Constant Value 0	Yes
$1-31	1-31	Temporaries	No

ALU Operand Size	32 Bits
Address Bus Size	32 Bits
Addressability	Word Addressable
Register File Size	32 x 32
Opcode size	6 bits
PC Increment	4