

Op-Code Table

Command	Opcode	Description
No Operation	0000	No action on this clock tick
Add	0001	Add Input to ACC
Subtract	0010	Subtract Input from ACC
AND	0011	AND Input with ACC
OR	0100	OR Input with ACC
NOT	0101	NOT ACC value
XOR	0110	XOR Input with ACC
Multiply	0111	Multiply Input with ACC
Reset	1000	Reset Register to all 0's
Divide	1001	Divide ACC with Input
Error	1111	Will send 0's through system

Modes of Operation

MODE	Code	Description
Ready	0000	System is idle
ADD	0001	Performing addition
SUB	0010	Performing subtraction
AND	0011	Performing an AND operation
OR	0100	Performing an OR operation
NOT	0101	Performing a NOT operation
XOR	0110	Performing a XOR operation
MULT	0111	Performing multiplication
ERR	1000	An error has occurred, and will not return to ready until reset
DIV	1001	Performing division

State Table

Current State	Command	Next State
Ready	No-Op, Reset	Ready
Ready	Add	ADD
Ready	Subtract	SUB
Ready	And	AND
Ready	Or	OR
Ready	Not	NOT
Ready	Xor	XOR
Ready	Multiply	MULT
Ready	Divide	DIV
ADD	No-Op, Reset	Ready
ADD	Error	ERR
SUB	No-Op, Reset	Ready
SUB	Error	ERR
ERR	Reset	Ready
AND	No-Op, Reset	Ready
OR	No-Op, Reset	Ready
NOT	No-Op, Reset	Ready
XOR	No-Op, Reset	Ready
MULT	No-Op, Reset	Ready
DIV	No-Op, Reset	Ready