INSTRUCTIONS

1.	NOP	NO OPERATION	0000
2.	ADD[R][CONST]	AC<-AC+([R]+[CONST])	0001
3.	SUB[R][CONST]	AC<-AC-([R]+[CONST])	0010
4.	MUL[R][CONST]	AC<-AC*([R]+[CONST])	0011
5.	DIV[R][CONST]	AC<-AC/([R]+[CONST])	0100
6.	SHR[N]	SHIFT AC RIGHT N BITS	0101
7.	SHL[N]	SHIFT AC LEFT N BITS	0110
8.	LOAD[M]	MDR <-[M+2*MBR]	0111
9.	STORE[M]	[M+2*MBR] <-MDR	1000
10.	JUMP[INST]	JUMP TO [INST]	1001
11.	JMPZ[INST]	JUMP TO [INST] IF Z FLAG IS HIGH	1010
12.	JMPDEC[INST]	DECREMENT LR BY ONE. JUMP TO [INST] IF LRZ IS LOW	1011
13.	MOVE[S][D]	[D]<-[S]	1100
14.	UARTSEND	SEND BYTE IN UARTTX VIA UART	1101
15.	UARTREAD	READ BYTE VIA UART INTO UARTRX	1110

DATA WIDTH:

OPCODE	4 BITS
[R]	5 BITS
[CONST]	7 BITS
[N]	4 BITS
[M]	12 BITS
[INST]	12 BITS
[S], [D]	5 BITS

FLAGS

1.	Z	AC IS ZERO FLAG
2.	LRZ	LR IS ZERO FLAG
3.	TXBUSY	UART TX BUSY FLAG
4.	RXREADY	UART RX READY FLAG

REGISTERS

1.	PC	PROGRAM COUNTER	
2.	IR	INSTRUCTION REGISTER	
3.	ZR	ZERO REGISTER	00000
4.	MBR	MEMORY BASE REGISTER	00001
5.	MDR	MEMORY DATA REGISTER	00010
6.	UARTTX	UART TX REGISTER	00011
7.	UARTRX	UART RX REGISTER	00100
8.	AC	ACCUMULATOR	00101
9.	LR	LOOP REGISTER	00110
10.	R0-R15	GENERAL PURPOSE REGISTERS	10000-11111