

Terrarum Memoryless Microcontroller ISA

Registers:	ACC	X	Y	#
	accumulator	x-register	y-register	(intermediate)
Ports:	P0	P1	B0	B1
	3-bit wires	3-bit wires	8-bit synch bus	8-bit synch bus
Opcodes:	JPZ # JMP# if ACC=0	JNZ # JMP# if ACC≠0	JMP # jump to line #	NOP do nothing
	INX X += 1	INY Y += 1	INC ACC += 1	BRK halts the program
	DEX X -= 1	DEY Y -= 1	DEC ACC -= 1	LDX # X = #
	ADX ACC += X	ADY ACC += Y	ADD # ACC += #	LDY # Y = #
	SBX ACC -= X	SBY ACC -= Y	SUB # ACC -= #	LDA # ACC = #
	MUX ACC *= X	MUY ACC *= Y	MUL # ACC *= #	TXY Y = X
	DVX ACC /= X	DVY ACC /= Y	DIV # ACC /= #	TXA ACC = X
	NOX X = -X - 1	NOY Y = -Y - 1	NOT ACC = -ACC - 1	TYX X = Y
	ANX ACC &= X	ANY ACC &= Y	AND # ACC &= #	TYA ACC = Y
	ORX ACC = X	ORY ACC = Y	OR # ACC = #	TAX X = ACC
	XOX ACC ^= X	XOY ACC ^= Y	XOR # ACC ^= #	TAY Y = ACC
	SLX ACC << X	SLY ACC << Y	SHL # ACC << #	XB0 discards B0 input
	SRX ACC >>> X	SRY ACC >>> Y	SHR # ACC >>> #	XB1 discards B1 input
	WP0 writes ACC to P0	WP1 writes ACC to P1	WB0 writes ACC to B0	WB1 write ACC to B1
	WP0I # write # to P0	WP1I # write # to P1	WB0I # write # to B0	WB1I # write # to B1
	RP0 read P0 to ACC	RP1 read P1 to ACC	RB0 read B0 to ACC	RB1 read B1 to ACC
Notes:	WP0I, WP1I, WB0I, WB1I May be written without the trailing 'I' IO from the Bus may have consequences depending on the system configuration Reading from a Bus will block the execution until a value is available Writing to a Bus will block the execution until the value is taken by the other device			