

G1 version 0, Documentation

Features:

- 8bit Data bus
- 16bit Address bus
- 16 I/O ports
- 4 general registers + 2 ALU registers

Memory partition:

- Stack 0x0000 - 0x00ff
- Free memory 0x0100 - 0xffff

Instruction set

HEX	Instruction
	Load/Store
04-05-06-07	Load Immediate in register A-B-C-D
84-85-86-87	Store Immediate in register A-B-C-D
08-09-0a-0b	Load [Address] in register A-B-C-D
88-89-8a-8b	Store [Address] in register A-B-C-D
28	Load Immediate in register ACC
29	Store Immediate in register ACC
2a	Load [Address] in register ACC
2b	Store [Address] in register ACC
30	Load Immediate in register TMP
31	Store Immediate in register TMP
32	Load [Address] in register TMP
33	Store [Address] in register TMP
	Transfer
0c-0d-0e-0f	Transfer register A to register ACC-B-C-D
4c-4d-4e-4f	Transfer register B to register ACC-A-C-D

8c-8d-8e-8f	Transfer register C to register ACC-A-B-D
cc-cd-ce-cf	Transfer register D to register ACC-A-B-C
2c-2d-2e-2f	Transfer register ACC to register A-B-C-D
ac	Transfer register ACC to register TMP
ad	Transfer register TMP to register ACC
	Jump
10	Jump to [Address]
11	Jump to [Address] if carry
12	Jump to [Address] if zero
13	Jump to [Address] if greater
50	Jump to [Address] if smaller
51	Jump to [Address] if equal
52	Jump to [Address] if positive
53	Jump to [Address] if negative
d0	Jump to [Address] if even
d1	Jump to [Address] if odd
d2	Jump to [Address] if shift carry
d3	Jump to [Address] if interrupt
d4	Jump to [Address] if not equal

	Operation
14	Add
15	Add with carry
16	Subtract
17	Multiply
54	Shift Right
55	Shift Left
56	Set Carry
57	NOT
c4	AND
c5	OR
c6	XOR
	Stack operations
18-19-1a-1b	Push register A-B-C-D to stack
98-99-9a-9b	Pull register A-B-C-D from stack
a8	Push ACC to stack
a9	Pull ACC from stack
34	Push TMP to stack
35	Pull TMP from stack

1c	Push Address to stack
1f	Pull Address from stack
20	Store stack pointer in immediate
21	Store stack pointer in [Address]
	Load/Store Address
25	Store Address in immediate
26	Load Address in [Address]
27	Store Address in [Address]
	I/O
fX	Write immediate to port XXXX
eX	Write [Address] to port XXXX
c1	Read from last interrupt port and store in immediate
c2	Read from last interrupt port and store in [Address]
bX	Read from port XXXX and store in immediate
c3	Load immediate into interrupt address
c7	Load [Address] into interrupt address
c8	Return from interrupt

All instructions that include [Address] need to have an address specified in the next 2 bytes.