

LC/3 instructions

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ADD⁺	0001			DR			SR1			0	00		SR2			
ADD⁺	0001			DR			SR1			1	imm5					
AND⁺	0101			DR			SR1			0	00		SR2			
AND⁺	0101			DR			SR1			1	imm5					
BR	0000			n	z	p	PCoffset9									
JMP	1100			000			BaseR			000000						
JSR	0100			1	PCoffset11											
JSRR	0100			0	00		BaseR			000000						
LD⁺	0010			DR			PCoffset9									
LDI⁺	1010			DR			PCoffset9									
LDR⁺	0110			DR			BaseR			offset6						
LEA⁺	1110			DR			PCoffset9									
NOT⁺	1001			DR			SR			111111						
RET	1100			000			111			000000						
RTI	1000			000000000000												
ST	0011			SR			PCoffset9									
STI	1011			SR			PCoffset9									
STR	0111			SR			BaseR			offset6						
TRAP	1111			0000			trapvect8									
reserved	1101															

LC /3 Device Registers

KBSR Keyboard Status Register	xFE00	KBSR[15] is one when keyboard has a new character
KBDR Keyboard Data Register	xFE02	KBDR[7:0] is last character typed on keyboard
DSR Display Status Register	xFE04	DSR[15] is one when display can accept a new character
DDR Display Data Register	xFE06	DSR[7:0] is the character to be displayed on screen

LC/3 Trap Service Routines

x20	GETC	Read a character into R0. Do not echo the character.
x21	OUT	Write a single character stored in R0.
x22	PUTS	Write a zero-terminated string stored at address R0.
x23	IN	PUTS followed by GETC, but with echoing of the input character.
x24	PUTSP	PUTS, but with two characters stored in each word.
x25	HALT	Halt

Powers of Two

2^0	1
2^1	2
2^2	4
2^3	8
2^4	16
2^5	32
2^6	64

2^7	128
2^8	256
2^9	512
2^{10}	1024
2^{11}	2048
2^{12}	4096
2^{13}	8192

2^{10}	1 K
2^{20}	1 M
2^{30}	1 G

ASCII table

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
<i>nul</i>	0	00	<i>space</i>	32	20	@	64	40	~	96	60
<i>soh</i>	1	01	!	33	21	A	65	41	a	97	61
<i>stx</i>	2	02	"	34	22	B	66	42	b	98	62
<i>etx</i>	3	03	#	35	23	C	67	43	c	99	63
<i>eot</i>	4	04	\$	36	24	D	68	44	d	100	64
<i>enq</i>	5	05	%	37	25	E	69	45	e	101	65
<i>ack</i>	6	06	&	38	26	F	70	46	f	102	66
<i>bel</i>	7	07	'	39	27	G	71	47	g	103	67
<i>bs</i>	8	08	(	40	28	H	72	48	h	104	68
<i>ht</i>	9	09	)	41	29	I	73	49	i	105	69
<i>lf</i>	10	0A	*	42	2A	J	74	4A	j	106	6A
<i>vt</i>	11	0B	+	43	2B	K	75	4B	k	107	6B
<i>ff</i>	12	0C	,	44	2C	L	76	4C	l	108	6C
<i>cr</i>	13	0D	-	45	2D	M	77	4D	m	109	6D
<i>so</i>	14	0E	.	46	2E	N	78	4E	n	110	6E
<i>si</i>	15	0F	/	47	2F	O	79	4F	o	111	6F
<i>dle</i>	16	10	0	48	30	P	80	50	p	112	70
<i>dc1</i>	17	11	1	49	31	Q	81	51	q	113	71
<i>dc2</i>	18	12	2	50	32	R	82	52	r	114	72
<i>dc3</i>	19	13	3	51	33	S	83	53	s	115	73
<i>dc4</i>	20	14	4	52	34	T	84	54	t	116	74
<i>nak</i>	21	15	5	53	35	U	85	55	u	117	75
<i>syn</i>	22	16	6	54	36	V	86	56	v	118	76
<i>etb</i>	23	17	7	55	37	W	87	57	w	119	77
<i>can</i>	24	18	8	56	38	X	88	58	x	120	78
<i>em</i>	25	19	9	57	39	Y	89	59	y	121	79
<i>sub</i>	26	1A	:	58	3A	Z	90	5A	z	122	7A
<i>esc</i>	27	1B	;	59	3B	[	91	5B	{	123	7B
<i>fs</i>	28	1C	<	60	3C	\	92	5C	|	124	7C
<i>qs</i>	29	1D	=	61	3D	]	93	5D	}	125	7D
<i>rs</i>	30	1E	>	62	3E	^	94	5E	~	126	7E
<i>us</i>	31	1F	?	63	3F		95	5F	<i>del</i>	127	7F

LC/3 Data Path

