DISPLAY CODES

20	(sp)	40	@		(0)
21	!	41	A		(1)
22	"	42	B		(2)
23	#	43	C		(3)
24	$	44	D		(4)
25	%	45	E		(5)
26	&	46	F		(6)
27	'	47	G		(7)
28	(	48	H		(8)
29	)	49	I		(9)
2A	*	4A	J		(A)
2B	+	4B	K		(B)
2C	,	4C	L		(C)
2D	-	4D	M		(D)
2E	.	4E	N		(E)
2F	/ END KEYBOARD BOOT	4F	O		(F)
30	0	50	P	KEYBOARD BOOT	
31	1	51	Q		
32	2	52	R		
33	3	53	S		
34	4	54	T		
35	5	55	U		
36	6	56	V		
37	7	57	W		
38	8	58	X		
39	9	59	Y		
3A	:	5A	Z		
3B	;	5B	◿		
3C	<	5C	|		
3D	=	5D	▶		
3E	>	5E	¬		
3F	?	5F	—		

70	begin blink
71	end point plot
72	end blink
73	begin point plot
74	end refresh

point-plot character

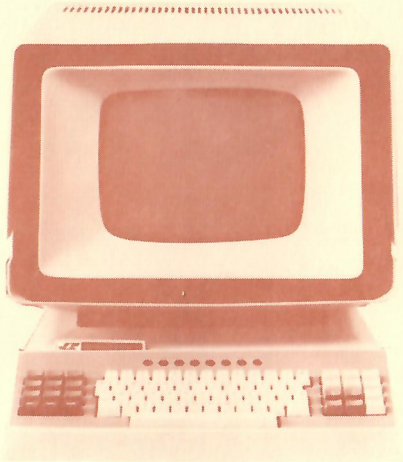
abcdefgh =

b	a
d	c
f	e
h	g

— INSTRUCTIONS —

LD	00ww	JMP	B8ww
ST	08ww	WJMP	8C00yyyy
AD	10ww	JSR	78ww
SB	18ww		
CM	20ww	CJFAL	A0xxyyyy
AN	28ww	CJLT	A1xxyyyy
OR	30ww	CJEQ	A2xxyyyy
		CJLE	A3xxyyyy
LDC	40ww	CJTRU	A4xxyyyy
STC	48ww	CJGE	A5xxyyyy
CMC	70ww	CJNE	A6xxyyyy
		CJGT	A7xxyyyy
INC	50ww		
DEC	58ww	JCFAL	8800yyyy
IN2	60ww	SKP	8800
		JCLT	8900yyyy
LDI	80xx	JCEQ	8A00yyyy
CLA	8000	JCLE	8B00yyyy
ADI	90xx	JCTRU	8C00yyyy
SBI	98xx	JCGE	8D00yyyy
ANI	A8xx	JCNE	8E00yyyy
ORI	B0xx	JCGT	8F00yyyy
XOR	D0xx	JCNG	8801yyyy
		JCPO	8C01yyyy
NOP	C000	JCEV	8C02yyyy
HALT	C001	JCOD	8802yyyy
MLA	C002	JCNC	8900yyyy
MAL	C003	JCCO	8D00yyyy
MCA	C004		
MAC	C005		
ENB	C006	CIO	C9zu
DSB	C007	RIO	CAzu
IOR	C008	WIO	CBzu
SHL4	C009		
CLL	C00C		
CLC	C00D	JTACK	C8zuyyyy
WAIT	C00F	JFACK	CCzuyyyy

ww = 9-bit address
xx = immediate data
yyyy = 16-bit addr.
z = I/O function code
u = I/O device no.



SPD™ 10/20

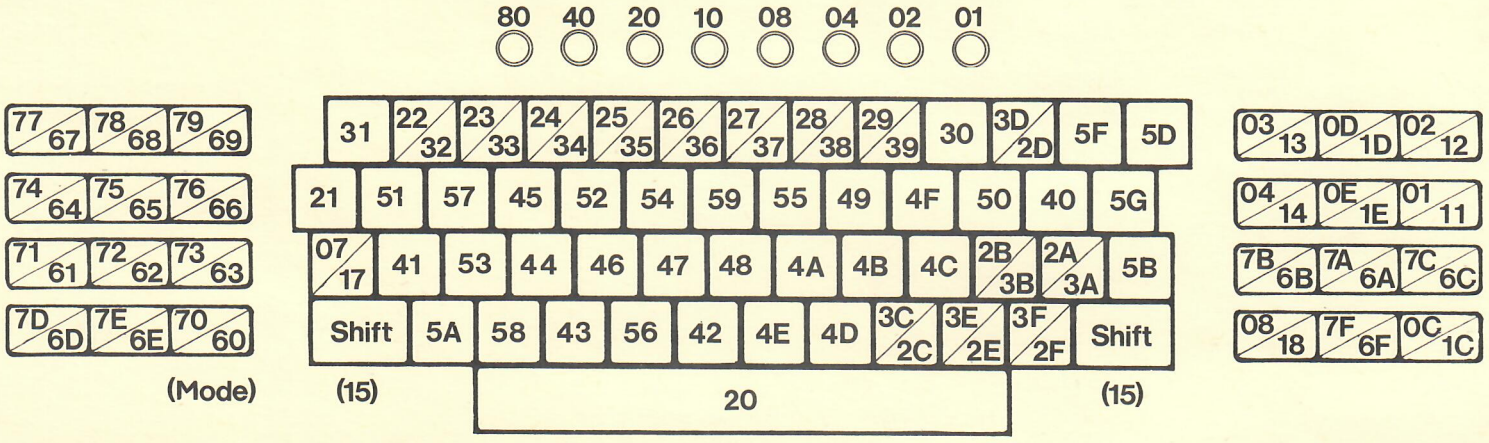
PROGRAMMERS' REFERENCE CARD

NAME:_____

INCOTERM CORPORATION

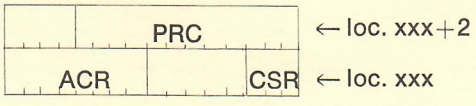
6 STRATHMORE ROAD, NATICK, MASS. 01760

KEYBOARD CODES



INTERRUPT ADDRESSES

FFE–FFF	Cursor
FFC–FFD	Power Restart Address
FF8–FFB	Background
FF4–FF7	Real-Time Clock
FF0–FF3	Device 0
FEC–FEF	Device 1 (paper-tape)
FE8–FEB	Device 2 (Keyboard)
FE4–FE7	Device 3
FE0–FE3	Device 4
FDC–FDF	Device 5
FD8–FDB	Device 6
FD4–FD7	Device 7



INSTRUCTION CODES

00	LD	80	LDI
08	ST	88	JCxx
10	AD	90	ADI
18	SB	98	SBI
20	CM	A0	CJxx
28	AN	A8	ANI
30	OR	B0	ORI
38	——	B8	JMP
40	LDC	C0	generics
48	STC	C8	I/O
50	INC	D0	XOR
58	DEC	D8	——
60	IN2	E0	——
68	——	E8	——
70	CMC	F0	——
78	JSR	F8	——

ASSEMBLER PSEUDO/OPS/OPERATORS

*	
/	
+	
–	
.RS.	
.LS.	
.NE.	
.GT.	
.LT.	
.GE.	
.EQ.	
.LE.	
.AND.	
.OR.	
.XOR.	

LISTED IN ORDER OF PRIORITY

SIZE	yyyy,yyyy
ORG	yyyy
EQU	yyyy
SET	yyyy
END	
WORD	nnn,nnn,...
BYTE	xx,xx,...
TEXT	'ABCDE...'
DAC	yyyy
BSZ	nnn
BSS	nnn
ALGN	
PAGE	nnn
EJECT	
LIST	
NLST	
IF	nnn
ENDF	
LIF	
NLIF	

I/O FUNCTION CODES

Refresh Controller

Cursor On	CIO 0,8
Set Line	CIO 1,8
Refresh On	CIO 2,8
Refresh Off	CIO 4,8
Cursor Off	CIO 8,8

Real-Time Clock

Read	RIO 0,F
Unmask	CIO 1,F
Mask	CIO 2,F

Remote Load Controller

Read Addr. 1	RIO 2,n
Read Addr. 2	RIO 4,n
Request Boot	CIO 0,n
Contr. On	TIO 0,n

Communications Controller

	sync	async
Read Data	RIO 0,n	RIO 1,n
Write Data	WIO 0,n	WIO 1,n
Reset	CIO 2,n	CIO 1,n
Unmask	CIO 8,n	CIO 8,n
Mask	CIO 4,n	CIO C,n
Set Read Mode	CIO 6,n	CIO 3,n
Set Write Mode	CIO A,n	CIO 2,n
Set Data Flag	CIO 1,n	CIO 4,n
Device Present	TIO 0,n	TIO 0,n
Data Set On	TIO 8,n	TIO 1,n
No Cancel	TIO 2,n	TIO 8,n
No Overrun	TIO 4,n	TIO 4,n
No Data Set Error	TIO 2,n	TIO 2,n
No EOT	TIO 8,n	TIO 1,n
No Line-Break		TIO 8,n

Keyboard Controller

Read Character	RIO 0,2
Sound Alarm	WIO 4,2
Interrupt If Strobe On	WIO 1,2
Unmask	CIO 8,2
Mask	CIO 4,2
Set Lights	CIO 2,2
Enable Repeat	CIO 1,2
Device Present	TIO 0,2

Paper Tape Reader

Read	RIO 0,1
Unmask	CIO 9,1
Mask	CIO 5,1
Leader Search	CIO 0,1
Boot Search	CIO 2,1
Device Present	TIO 0,1