

UNIVAC 1107 INSTRUCTION REPERTOIRE

BASIC INSTRUCTION WORD

FUNCTION	*OPERAND INTERPRET	**SPECIAL DESIGNATOR	MODIFIER DESIGNATOR	INC DES	IND ADD	OPERAND ADDRESS
f	j	a	b	h	i	u
35 30	29 26	25 22	21 18	17	16 15	00

* OPERAND INTERPRETATION / MINOR FUNCTION CODE
 ** A REG, B REG, R REG DESIGNATOR / I/O CHANNEL NUMBER

PARTIAL TRANSFER

MNEM CODE	TO ARITH		MNEM CODE	FROM ARITH		j	MNEM CODE	TO ARITH		MNEM CODE	FROM ARITH		j	MNEM CODE	TO ARITH		MNEM CODE	FROM ARITH		j
	Z	X		X	Z			Z	X		X	Z			Z	X		X	Z	
W	35-00	→ 35-00	W	35-00	→ 35-00	00	XT2	23-12	→ 11-00	T2	11-00	→ 23-12	06	S3	23-18	→ 05-00	S3	05-00	→ 23-18	13
H2	17-00	→ 17-00	H2	17-00	→ 17-00	01	XT1	35-24	→ 11-00	T1	11-00	→ 35-24	07	S2	29-24	→ 05-00	S2	05-00	→ 29-24	14
HI	35-18	→ 17-00	HI	17-00	→ 35-18	02	S6	05-00	→ 05-00	S6	05-00	→ 05-00	10	S1	35-30	→ 05-00	S1	05-00	→ 35-30	15
XH2	17-00	→ ^s 17-00	H2	17-00	→ 17-00	03	S5	11-06	→ 05-00	S5	05-00	→ 11-06	11	*UOP	^u 17-00	→ 17-00				16
XHI	35-18	→ ^s 17-00	HI	17-00	→ 35-18	04	S4	17-12	→ 05-00	S4	05-00	→ 17-12	12	*XUOP	^u 17-00	→ ^s 17-00				17
XT3	11-00	→ ^s 17-00	T3	11-00	→ 11-00	05	S = SIGN BIT EXTENDED				* IF B = O, U = h,i,u ; IF B ≠ O, U = u + B _q									

TYPE	MNEM. CODE	OPER. CODE		INSTRUCTION	DESCRIPTION	EXEC. TIME	
		f	j			ALT. BANK	SAME BANK
TRANSFERS	STP	01	0-15	STORE POSITIVE	(A) → U	4.0	8.0
	STN	02	0-15	STORE NEGATIVE	-(A) → U	4.0	8.0
	STM	03	0-15	STORE MAGNITUDE	A → U	4.0	8.0
	STR	04	0-15	STORE R _a	(R _a) → U	4.0	8.0
	STZ	05	0-15	STORE ZERO	ZERO → U (CLEAR U)	4.0	8.0
	STB	06	0-15	STORE B _a	(B _a) → U	4.0	8.0
	LDP	10	0-17	LOAD POSITIVE	(U) → A	4.0	8.0
	LDN	11	0-17	LOAD NEGATIVE	-(U) → A	4.0	8.0
	LDM	12	0-17	LOAD POSITIVE MAGNITUDE	U → A	4.0	8.0
	LNM	13	0-17	LOAD NEGATIVE MAGNITUDE	- U → A	4.0	8.0
	LDR	23	0-17	LOAD R _a	(U) → R _a	4.0	8.0
	LDB	27	0-17	LOAD B _a	(U) → B _a	4.0	8.0
LBM	26	0-17	LOAD B _a MODIFIER	(U) → (B _a) ₁₇₋₀₀ ; (B _a) ₃₅₋₁₈ UNCHANGED	4.0	8.0	

	MNEM	F	J	INSTRUCTION	DESCRIPTION	ALT	SAME		
ARITHMETIC	ADD	14	0-17	ADD	$(A) + (U) \rightarrow A$	4.0	8.0		
	ADM	16	0-17	ADD MAGNITUDE	$(A) + (U) \rightarrow A$	4.0	8.0		
	ADL	20	0-17	ADD AND LOAD	$(A) + (U) \rightarrow A + 1$	4.0	8.0		
	ADB	24	0-17	ADD TO B _a	$(B_a) + (U) \rightarrow B_a$	4.0	8.0		
	SUB	15	0-17	SUBTRACT	$(A) - (U) \rightarrow A$			4.0	8.0
	SBM	17	0-17	SUBTRACT MAGNITUDE	$(A) - (U) \rightarrow A$			4.0	8.0
	SBL	21	0-17	SUBTRACT AND LOAD	$(A) - (U) \rightarrow A + 1$			4.0	8.0
	SBB	25	0-17	SUBTRACT FROM B _a	$(B_a) - (U) \rightarrow B_a$			4.0	8.0
	MPI	30	0-17	MULTIPLY INTEGER	$(A) \bullet (U) \rightarrow A, A + 1$	12.0	16.0		
	MPS	31	0-17	MULTIPLY SINGLE (INTEGER)	$(A) \bullet (U) \rightarrow A$ (LOWER 36 BITS OF PRODUCT)	12.0	16.0		
	MPF	32	0-17	MULTIPLY FRACTIONAL	$(A) \bullet (U) \rightarrow A, A + 1$	12.0	16.0		
	DVI	34	0-17	DIVIDE INTEGER	$(A, A+1) \div (U); \text{QUOT} \rightarrow A, \text{REM} \rightarrow A + 1$	31.3	35.3		
	DVL	35	0-17	DIVIDE, LOAD (FRACTIONAL)	$(A) \div (U); \text{QUOT} \rightarrow A + 1, \text{NO REMAINDER}$	31.3	35.3		
	DVF	36	0-17	DIVIDE FRACTIONAL	$(A, A+1) \div (U); \text{QUOT} \rightarrow A, \text{REM} \rightarrow A + 1$	31.3	35.3		
	ADDH	72	04	ADD HALVES	$(A)_{17-00} + (U)_{17-00} \rightarrow A_{17-00}; (A)_{35-18} + (U)_{35-18} \rightarrow A_{35-18}$	4.0	8.0		
SUBH	72	05	SUBTRACT HALVES	$(A)_{17-00} - (U)_{17-00} \rightarrow A_{17-00}; (A)_{35-18} - (U)_{35-18} \rightarrow A_{35-18}$	4.0	8.0			
ADDT	72	06	ADD THIRDS	$(A)_{35-24} \pm (U)_{35-24} \rightarrow A_{35-24}; (A)_{23-12} \pm (U)_{23-12} \rightarrow A_{23-12}$	4.0	8.0			
SUBT	72	07	SUBTRACT THIRDS	$(A)_{11-00} \pm (U)_{11-00} \rightarrow A_{11-00}$	4.0	8.0			
FLOATING	FLAD	76	00	FLOATING ADD	$(A) + (U) \rightarrow A, A + 1$			14.0	18.0
	FLSB	76	01	FLOATING SUBTRACT	$(A) - (U) \rightarrow A, A + 1$			14.0	18.0
	FLMP	76	02	FLOATING MULTIPLY	$(A) \bullet (U) \rightarrow A, A + 1$			13.3	17.3
	FLDV	76	03	FLOATING DIVIDE	$(A) \div (U); \text{QUOT} \rightarrow A, \text{REM} \rightarrow A + 1$			26.7	30.7
	FLUP	76	04	FLOATING POINT UNPACK	UNPACK (U); MANT $\rightarrow A + 1$, SIGN EXT; CHAR $\rightarrow A_{07-00}$			4.0	8.0
	FLNP	76	05	FLOATING NORMALIZE PACK	(U) \equiv MANT, (A) $_{07-00} \equiv$ CHAR; NORMALIZE, STORE $\rightarrow A + 1$			7.3	11.3
	FLCM	76	06	FLOATING CHAR DIFF MAG	$ (A)_{34-27} - (U)_{34-27} \rightarrow A + 1$			4.0	8.0
FLCD	76	07	FLOATING CHAR DIFF	$ (A)_{34-27} - (U)_{34-27} \rightarrow A + 1$			4.0	8.0	
LOGICAL	SSE	40	0-17	SELECTIVE SET	$(A) \oplus (U) \rightarrow A + 1$	4.0	8.0		
	SCP	41	0-17	SELECTIVE COMPLEMENT	$(A) \oplus (U) \rightarrow A + 1$	4.0	8.0		
	SCL	42	0-17	SELECTIVE CLEAR	$(A) \odot (U) \rightarrow A + 1$	4.0	8.0		
	SSU	43	0-17	SELECTIVE SUBSTITUTE	$(A) \odot (R_m) \oplus (U) \odot (R_m) \rightarrow A + 1$	4.7	8.7		
	SEP	44	0-17	SEL EVEN PARITY TEST	IF EVEN PARITY AFTER $(A) \odot (U)$, SKIP NI	6/10	6/10		
SOP	45	0-17	SEL ODD PARITY TEST	IF ODD PARITY AFTER $(A) \odot (U)$, SKIP NI	6/10	6/10			

	OPRN CODE	INSTRUCTION		DESCRIPTION	EXECUTION TIME							
					ALT		SAME					
					SKIP	NO	SKIP	NO				
SHIFT INST.	SCSH	73	00	SINGLE CIRC SHIFT	SHIFT (A) RIGHT U PLACES, CIRCULARLY				NA	4.0	NA	4.0
	DCSH	73	01	DOUBLE CIRC SHIFT	SHIFT (A, A+1) RIGHT U PLACES, CIRCULARLY				NA	4.0	11A	4.0
	SLSH	73	02	SINGLE LOGICAL SHIFT	SHIFT (A) RIGHT U PLACES, END OFF; ZERO FILL				NA	4.0	NA	4.0
	DLSH	73	03	DOUBLE LOGICAL SHIFT	SHIFT (A, A+1) RIGHT U PLACES, END OFF; ZERO FILL				NA	4.0	NA	4.0
	SASH	73	04	SINGLE ARITH SHIFT	SHIFT (A) RIGHT U PLACES, END OFF; SIGN BIT FILL				NA	4.0	NA	4.0
	DASH	73	05	DOUBLE ARITH SHIFT	SHIFT (A, A+1) RIGHT U PLACES, END OFF; SIGN BIT FILL				NA	4.0	NA	4.0
	SFSH	73	06	SCALE FACTOR SHIFT	(U) → A, SHIFT (A) LEFT CIRC TILL A35 ≠ A34, K → (A+1)				NA	6.0	NA	10.0
TEST	TMO	47	0-17	TEST MODIFIER	IF + (Ba) _L ≥ + (U) _L , SKIP; (Ba) _L + (Ba) _U → (Ba) _L				8.7	4.7	12.7	8.7
	TZR	50	0-17	TEST ZERO	SKIP IF (U) = ± 0				8.0	4.0	12.0	8.0
	TNZ	51	0-17	TEST NOT ZERO	SKIP IF (U) ≠ ± 0				8.0	4.0	12.0	8.0
	TEQ	52	0-17	TEST EQUAL	SKIP IF (U) = (A)				8.0	4.0	12.0	8.0
	TNE	53	0-17	TEST NOT EQUAL	SKIP IF (U) ≠ (A)				8.0	4.0	12.0	8.0
	TLE	54	0-17	TEST LESS OR EQUAL	SKIP IF (U) ≤ (A)				8.0	4.0	12.0	8.0
	TGR	55	0-17	TEST GREATER THAN	SKIP IF (U) > (A)				8.0	4.0	12.0	8.0
	TWL	56	0-17	TEST WITHIN LIMITS	SKIP IF (A) < (U) ≤ (A+1)				8.7	4.7	12.7	8.7
	TOL	57	0-17	TEST OUTSIDE LIMITS	SKIP IF (U) ≤ (A) or (U) > (A+1)				8.7	4.7	12.7	8.7
	TPO	60	0-17	TEST POSITIVE	SKIP IF (U) ≥ ± 0				8.0	4.0	12.0	8.0
TNG	61	0-17	TEST NEGATIVE	SKIP IF (U) < ± 0				8.0	4.0	12.0	8.0	
*SEARCH	SEQ	62	0-17	SEARCH EQUAL	SKIP IF (U) i = (A), REPEAT				4.0	4.0	4.0	4.0
	SNE	63	0-17	SEARCH NOT EQUAL	SKIP IF (U) i ≠ (A), REPEAT				4.0	4.0	4.0	4.0
	SLE	64	0-17	SEARCH LESS/EQUAL	SKIP IF (U) i ≤ (A), REPEAT				4.0	4.0	4.0	4.0
	SGR	65	0-17	SEARCH GREATER THAN	SKIP IF (U) i > (A), REPEAT				4.0	4.0	4.0	4.0
	SWL	66	0-17	SEARCH WITHIN LIMITS	SKIP IF (A) < (U) i ≤ (A+1), REPEAT				4.7	4.7	4.7	4.7
	SOL	67	0-17	SEARCH OUTSIDE LIMITS	SKIP IF (A) ≥ (U) i or (U) i > (A+1), REPEAT				4.7	4.7	4.7	4.7
*MASK SEARCH	MSEQ	71	00	MASK SEARCH EQUAL	SKIP IF (U) i ⊙ (M) = (A) ⊙ (M), REPEAT				4.0	4.0	4.0	4.0
	MSNE	71	01	MASK SEARCH NOT EQUAL	SKIP IF (U) i ⊙ (M) ≠ (A) ⊙ (M), REPEAT				4.0	4.0	4.0	4.0
	MSLE	71	02	MASK SEARCH LESS/EQUAL	SKIP IF (U) i ⊙ (M) ≤ (A) ⊙ (M), REPEAT				4.0	4.0	4.0	4.0
	MSGR	71	03	MASK SEARCH GREATER	SKIP IF (U) i ⊙ (M) > (A) ⊙ (M), REPEAT				4.0	4.0	4.0	4.0
	MSWL	71	04	MASK SEARCH WITHIN LIMITS	SKIP IF (A) ⊙ (M) < (U) i ⊙ (M) ≤ (A+1) ⊙ (M), REPEAT				4.7	4.7	4.7	4.7
	MSOL	71	05	MASK SEARCH OUTSIDE LIMITS	SKIP IF (U) i ⊙ (M) ≤ (A) ⊙ (M) / (U) i ⊙ (M) > (A+1) ⊙ (M), REPEAT				4.7	4.7	4.7	4.7

*SETUP and TERMINATE TIME = 16 u sec.

	MNEM. CODE	OPER. CODE		INSTRUCTION	DESCRIPTION	EXECUTION TIME		
		f	j			JUMP	NO	
JUMPS	UNCOND.	RTJP	72	01	RETURN JUMP	$(P) \rightarrow (U)_{17-00}$, JUMP TO U + 1	8.0	-
		LMJP	74	13	LOAD MODIFIER, JUMP	$(P) \rightarrow (Ba)_{17-00}$, THEN JUMP	4.0	-
		EIJP	74	07	ENABLE I/O INT, JUMP	PERMIT ALL INTERRUPTS & JUMP	4.0	-
		DIJP	72	13	DISABLE I/O INT, JUMP	PREVENT ALL INTERRUPTS & JUMP	4.0	-
		STJP	72	12	SET TRACE JUMP	SET TRACE MODE & JUMP	4.0	-
	CONDITIONAL	ZRJP	74	00	ZERO JUMP	JUMP IF $(A) = 0$	8.0	4.0
		NZJP	74	01	NON ZERO JUMP	JUMP IF $(A) \neq \pm 0$	8.0	4.0
		POJP	74	02	POSITIVE JUMP	JUMP IF $(A) \geq \pm 0$	8.0	4.0
		NGJP	74	03	NEGATIVE JUMP	JUMP IF $(A) < \pm 0$	8.0	4.0
		CSJP	74	04	CONSOLE SELECT JUMP	JUMP IF a DESIGNATOR = CONSOLE SETTING	4.0	4.0
		SSJP	74	05	SELECT STOP JUMP	STOP IF a DESIGNATOR = CONSOLE SETTING	4.0	4.0
		PBJP	72	02	POSITIVE BIT JUMP	JUMP IF $(A)_{35} = 0$; ALWAYS LEFT SHIFT (A) CIRCONE PL	8.0	4.0
		NBJP	72	03	NEGATIVE BIT JUMP	JUMP IF $(A)_{35} \neq 0$; ALWAYS LEFT SHIFT (A) CIRCONE PL	8.0	4.0
		EVJP	74	10	EVEN JUMP	JUMP IF $(A)_{00} = \pm 0$	8.0	4.0
		ODJP	74	11	ODD JUMP	JUMP IF $(A)_{00} \neq \pm 0$	8.0	4.0
		MOJP	74	12	MODIFIER JUMP	JUMP IF $(Ba)_{17-00} > 0$; ALWAYS INCREMENT (Ba)	8.0	4.0
		OVJP	74	14	OVERFLOW JUMP	JUMP IF OVERFLOW CONDITION IS SET	4.0	4.0
		NOJP	74	15	NO OVERFLOW JUMP	JUMP IF OVERFLOW CONDITION IS NOT SET	4.0	4.0
		CYJP	74	16	CARRY JUMP	JUMP IF CARRY CONDITION IS SET	4.0	4.0
		NCJP	74	17	NO CARRY JUMP	JUMP IF CARRY CONDITION IS NOT SET	4.0	4.0
IXJP	70	00	INDEX JUMP	JUMP IF $(FM)_{ja} > 0$; $(FM)_{ja} - 1 \rightarrow (FM)_{ja}$	4.0	8.0		
SPECIAL	BTR	22	0-17		BLOCK TRANSFER	$(u + Bb) \rightarrow (u + Ba)$, REPEAT	8.0	*
	EXRI	72	10		EXECUTE REMOTE INST	EXECUTE INSTRUCTION AT U	4.0	
	LMLR	72	11		LOAD MEM LOCKOUT REG.	$(U)_{15-00} \rightarrow MLR$	4.0	
	WAIT	72	00		WAIT FOR INTERRUPT	PROGRAM SEQUENCE STOPS, WAIT FOR INT.	4.0	
	NOOP	74	06		NO OPERATION	DO NOTHING, TAKE NI	4.0	

UNIVAC 1107 INPUT/OUTPUT INSTRUCTIONS

MNEM CODE	FUNC CODE		INSTRUCTION	DESCRIPTION	EXEC. TIME	
	i	j			ALT	SAME
IIPM	75	00	INITIATE INPUT MODE	(U)→ INPUT ACC. CONT. WD & INIT INPUT MODE, CHAN a	4.0	8.0
IMIM	75	01	INITIATE MON INPUT MODE	(U)→ INPUT ACC. CONT. WD & INIT MONITOR INPUT, CHAN a	4.0	8.0
IMJP	75	02	INPUT MODE JUMP	IF CHAN a IS INPUT MODE, JUMP TO U; IF NOT, TAKE NI	4.0	4.0
TIPM	75	03	TERMINATE INPUT MODE	TERMINATE INPUT MODE ON CHANNEL a	4.0	4.0
IOPM	75	04	INITIATE OUTPUT MODE	(U)→ OUTPUT ACC CONT WD & INIT OUTPUT, CHAN a	4.0	8.0
IMOM	75	05	INITIATE MON OUTPUT MODE	(U)→ OUTPUT ACC CONT WD & INIT MON OUTPUT, CHAN a	4.0	8.0
OMJP	75	06	OUTPUT MODE JUMP	IF CHANNEL a IS OUTPUT MODE, JUMP TO U; IF NOT, NI	4.0	4.0
TOPM	75	07	TERMINATE OUTPUT MODE	TERMINATE OUTPUT MODE ON CHANNEL a	4.0	4.0
IFNM	75	10	INITIATE FUNCTION MODE	(U)→ OUTPUT ACC CONT WD & INIT FUNC MODE, CHAN a	4.0	8.0
IMFM	75	11	INITIATE MON FUNCT MODE	(U)→ OUTPUT ACC CONT WD & INIT MON FUNC, CHAN a	4.0	8.0
FMJP	75	12	FUNCTION MODE JUMP	IF CHANNEL a IS FUNCTION MODE, JUMP TO U; IF NOT, NI	4.0	4.0
FEXT	75	13	FORCE EXT TRANSFER	ON CHANNEL a, SIMULATE ODR TO ENABLE XRFR FUNC/DATA	4.0	4.0
EAEI	75	14	ENABLE ALL EXT INTERRUPTS	PERMIT ALL EXTERNAL INTERRUPTS	4.0	4.0
DAEI	75	15	DISABLE ALL EXT INTERRUPTS	PREVENT ALL EXTERNAL INTERRUPTS	4.0	4.0
ESEI	75	16	ENABLE SGLE EXT INTERRUPTS	PERMIT EXTERNAL INTERRUPT ON CHANNEL a ONLY	4.0	4.0
DSEI	75	17	DISABLE SGLE EXT INTERRUPTS	PREVENT EXTERNAL INTERRUPT ON CHANNEL a ONLY	4.0	4.0

G	OPERATION	NEXT ADD
00	INCREMENT V	V + 1
01	INHIBIT	V
10	DECREMENT V	V - 1
11	INHIBIT	V

I/O ACCESS CONTROL WORD

WORD TRANSFER COUNTER				STORAGE ADDRESS			
W				V			
G							
35	34	33		18	17		00

DECIMAL ADDRESS	OCTAL ADDRESS	ASSIGNMENT	DECIMAL ADDRESS	OCTAL ADDRESS	ASSIGNMENT
1-15	1-17	INDEX REGISTERS (15)	128-143	200-217	EXTERNAL REQUEST INTERRUPTS (16)
12-27	14-33	ARITHMETIC REGISTERS *(16)	144-159	220-237	INPUT DATA TERM INTERRUPT (16)
28-31	34-37	UNASSIGNED	160-175	240-257	OUTPUT DATA TERM INTERRUPT (16)
32-47	40-57	INPUT ACCESS-CONTROL WDS (16)	176-191	260-277	FUNCTION TERM INTERRUPTS (16)
48-63	60-77	OUTPUT ACCESS-CONTROL WDS (16)	192-199	300-307	ERROR INTERRUPTS (8)
64	100	REAL-TIME CLOCK	200	310	REAL-TIME CLOCK INTERRUPT
65	101	REPEAT COUNTER	201	311	EXTERNAL STATUS WORD
66	102	M REGISTER	202	312	EXTERNAL SYNCHRONIZER INTERRUPT
67	103	T REGISTER			
		} R REGISTERS			
68-79	104-117	ADDITIONAL SPECIAL REGISTERS	203-65535	313-177777	UNASSIGNED
80-127	120-177	UNASSIGNED			
CONTROL MEMORY			CORE MEMORY		
*OVERLAP INDEX REG. (14-17)					

STATUS WORD

STATUS CODE		NOT USED		ERROR/OVERFLOW WORD ADDRESS (DRUM ONLY)	
35	30	29	23	22	00

STATUS CODES

MAGNETIC TAPE		MAGNETIC DRUM		PUNCH CARDS	
10	REQUEST UNIT REWINDING	04	OVERFLOW ADDRESS	40	NORMAL INTERRUPT
24	SEQUENCE ERROR; CONTROL UNIT	05	SEARCH FIND ADDRESS		
20	SEQUENCE ERROR; CHANNEL SYNCHRONIZER	06	PARITY ERROR IN OVERFLOW ADDRESS	50	ILLEGAL FUNCTION
30	CHARACTER-COUNT; CHANNEL SYNCHRONIZER	07	DRUM ERROR ADDRESS		
34	END OF FILE	14	WRITE FAULT	54	READ/PUNCH CHECK ERROR
40	NORMAL INTERRUPT	20	CHANNEL SYNCHRONIZER SEQUENCE/OPER ERROR		
44	END OF TAPE	30	CHANNEL SYNCHRONIZER CHARACTER-COUNT ERROR	60	INAPPROPRIATE FUNCTION
50	ILLEGAL FUNCTION	34	END OF FILE		
54	TAPE UNIT SELECT ERROR	50	ILLEGAL FUNCTION	70	ILLEGAL CHARACTER
60	PARITY ERROR; CONTROL UNIT	60	CONTROL UNIT; SEQUENCE ERROR		
70	CHARACTER-COUNT ERROR; CONTROL UNIT	64	PARITY ERROR, CONTINUOUS READ	74	INTERLOCK FAULT
74	INTERLOCK ERROR	70	CONTROL UNIT; CHARACTER-COUNT ERROR		

MAGNETIC TAPE

FC	NOT USED	UNISERVO SELECT BIT
35 30 29	12	11 0

FC	NOT USED	FC	NOT USED	UNISERVO SELECT BIT
35 30 29 24	23 21	20	12	11 0

UNIVAC FORMAT

COMPATIBLE (III)C FORMAT

FUNCTION		* CODE		* CODE		FUNCTION	
WRITE ONE BLK	12.5 KC	01	11	020	120	WRITE BINARY	62.5 KC
WRITE ONE BLK	25 KC	02	12	030	130	WRITE BINARY.	22.5 KC
READ FWD BLK	(LOW)	41	51	022	122	WRITE BCD	62.5 KC
READ FWD BLK	(NORM)	42	52	032	132	WRITE BCD	22.5 KC
READ FWD BLK	(HIGH)	43	53	023	123	WRITE END FILE	62.5 KC
READ BWD BLK	(LOW)	61	71	033	133	WRITE END FILE	22.5 KC
READ BWD BLK	(NORM)	62	72	420	520	READ BINARY	62.5 KC
READ BWD BLK	(HIGH)	63	73	430	530	READ BINARY	22.5 KC
SEARCH READ	(LOW)	45	55	422	522	READ BCD	62.5 KC
SEARCH READ	(NORM)	46	56	432	532	READ BCD	22.5 KC
SEARCH READ	(HIGH)	47	57	460	560	SEARCH BINARY	62.5 KC
SRH READ BWD	(LOW)	65	75	470	570	SEARCH BINARY	22.5 KC
SRH READ BWD	(NORM)	66	76	462	562	SEARCH BCD	62.5 KC
SRH READ BWD	(HIGH)	67	77	472	572	SEARCH BCD	22.5 KC
REWIND		20	30	201	301	REWIND	
REWIND & INTERLOCK		21	31	211	311	REWIND & INTERLOCK	
TERMINATE		23	33	230	330	TERMINATE	
BOOTSTRAP		40	50	400	500	BOOTSTRAP	
* CODE:				203	303	BACKSPACE BLK	
1st COL., WITHOUT INTERRUPT				213	313	BACKSPACE FILE	
2nd COL., WITH INTERRUPT				003	103	ERASE (4")	

HI-SPEED PRINTER

FC	NOT USED	LINE SPACE	NOT USED	SELECT BIT
35	29	23	17	01 00

FUNC CODE		DESCRIPTION
02	12	PRINT
23	33	TERMINATE

CHARACTERS/LINE : 128

SPACING : 0-63

PRINT RATE : 600 L/M

PERIPHERAL

FIELDATA CODE

H.S. PRINTER

00	01	10	11	SUFFIX CODE
MASTER SPACE	K	⌋	0	0000
UPPER CASE	L	-	1	0001
LOWER CASE	M	+	2	0010
FEED	N	<	3	0011
CAR RET	O	=	4	0100
SPACE	P	>	5	0101
A	Q	-	6	0110
B	R	\$	7	0111
C	S	*	8	1000
D	T	C	9	1001
E	U	"	1	1010
F	V	:	:	1011
G	W	?	/	1100
H	X	!	•	1101
I	Y	,	SPEC	1110
J	Z	STOP	IDLE	1111

PUNCH CARD

FC	NOT USED		
35	30	29	00

FUNCT.	DESCRIPTION		
02 12	OUTPUT: PUNCH CARD, STK 0		
03 13	OUTPUT: PUNCH CARD, STK 1		
04 14	OUTPUT: ENABLE TRANSLATE		
05 15	OUTPUT: PUNCH BY COLUMN		
06 16	OUTPUT: PUNCH BY ROW		
23 33	TERMINATE		
41 51	INPUT: XFER I		
42 52	INPUT: XFER I, TRIP FILL		
43 53	INPUT: TRIP I		
60 70	INPUT: SELECT STACKER 1		
61 71	INPUT: SELECT STACKER 2		
62 72	INPUT: ENABLE TRANSLATE		
63 73	INPUT: READ BY COLUMN		
64 74	INPUT: READ BY ROW		

MAGNETIC DRUM

FC	NOT USED			WORD		ADDRESS	
35	30	29	23	ANG	SEC	ANGULAR	ADDRESS
				22	18	17	0

FUNCTION	DESCRIPTION
02	WRITE CONTINUOUSLY
23/33	TERMINATE
40/50	BOOTSTRAP
42	READ CONTINUOUSLY
52	READ BLOCK & TERM EOB
45	SRH; FIND, TERM SRH
46	SRH READ; FIND, CONT READ
55	BLK SRH; TERM SRH IF EOB
56	BLK SRH READ; FIND, CONT READ EOB

DRUM	ANGULAR SECTION (BITS 22-18)			
0	0	1	2	
1	3	4	5	
2	6	7	8	
3	9	10	11	
4	12	13	14	
5	15	16	17	
6	18	19	20	
7	21	22	23	

MAX. DRUM UNITS : 8

SELECT BIT	
35	08 0

FUNCTION	SELECT	BIT CODE	FUNCTION
READ FWD	00	04	PUNCH ON
READ BWD	01	05	READER ON
FAULT	02	06	CPR/ERROR CL
MASTER CLEAR	03	07	PUNCH OFF
		08	READER OFF

PAPER TAPE

400 CHAR/SEC READER
110 CHAR/SEC PUNCH