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ABSTRACT and CONTENTS

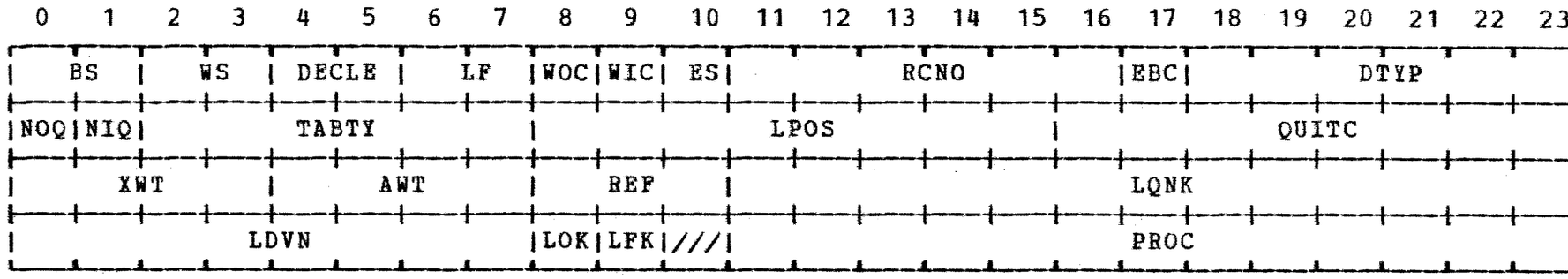
This document specifies the bit assignment on the ROM boards for the Data Communications Computer, and with which clock, K2 or K3, they are loaded into the I register.

DATA COMMUNICATIONS COMPUTER ROM BIT ASSIGNMENT

Ø	MCØ	K2	22	UNUSED	
1	MC1	K2	23	UNUSED	
2	MC2	K2	24	UNUSED	
3	MC3	K2	25	UNUSED	
4	MC4	K2	26	C(Ø)	K3
5	MC5	K2	27	C(1)	K3
6	MCONTØ	K3	28	C(2)	K3
7	MCONT1	K3	29	C(3)	K3
8	B(Ø)	K3	3Ø	C(4)	K3
9	B(1)	K3	31	C(5)	K3
10	B(2)	K3	32	C(6)	K3
11	B(3)	K3	33	C(7)	K3
12	B(4)	K3	34	C(8)	K3
13	B(5)	K3	35	C(9)	K3
14	B(6)	K3	36	C(1Ø)	K3
15	B(7)	K3	37	C(11)	K3
16	B(8)	K3	38	C(12)	K3
17	B(9)	K3	39	C(13)	K3
18	UNUSED		4Ø	C(14)	K3
19	UNUSED		41	C(15)	K3
2Ø	UNUSED		42	IHR	K2
21	UNUSED		43	TCX	K3

44	TCY	K3
45	TSPY	K3
46	THY	K3
47	TXW	K3
48	TYW	K3
49	TAX	K3
5Ø	LOC	K2
51	SSPØ	K2
52	SSP1	K2
53	SSP2	K2
54	SSP3	K2
55	SSP4	K2
56	SSP5	K2
57	TOSY	K3
58	LRØ	K3
59	LSPX	K3
6Ø	MSØ	K2
61	MS1	K2
62	MS2	K2
63	MS3	K2
64	MS4	K2
65	MS5	K2
66	UNUSED	
67	RRNØ	K2
68	RRN1	K2
69	UNUSED	
7Ø	LRNØ	K3
71	LRN1	K3
72	LMX	K3
73	LMY	K3
74	LQX	K3
75	LQY	K3
76	LZX	K3
77	LZY	K3
78	BLØ	K2
79	BL1	K2
8Ø	BL2	K2
81	BL3	K2
82	BRØ	K2
83	BR1	K2
84	BR2	K2
85	BR3	K2
86	VCYP	K3
87	DGO	K3
88	TE1Y	K3
89	TE2Y	K3

PUBLIC MEMORY FOR INPUT/OUTPUT LINE - 4 WORDS (MTAA,MTAE,/4)



AWT: ACTUAL WAIT TIME LEFT (2:4,7)
AWT IS SET TO XWT WHEN AN INPUT WAKEUP IS GENERATED.

BS: BREAK STRATEGY (STOP ECHO STRATEGY) (0:0,1)
0) NEVER
1) CONTROL CHARACTERS ONLY
2) PUNCTUATION CHARACTERS AND CONTROL CHARACTERS
3) ALWAYS

CCP:* [CCPBIT] IF ON WHEN LINE IS EMPTY WAKEUP PROCESS IN LINK FIELD (0:6,6)

CLE:* CHARACTER LOCALLY ECHOED (FOR LOCAL LINES) (0:5,5)

DE:* DEFERRED ECHO. IF ON, ECHO CHARACTERS WHEN INPUT TO CPU (0:4,4)

DECLE: BOTH DE AND CLE (0:4,5)
NORMALLY DE AND CLE ARE 0. WHEN A BREAK CHAR IS INPUT TO
CHIO CLE IS SET. WHEN A BREAK CHAR IS INPUT TO THE CPU DE IS SET.
WHEN AN ATTEMPT TO READ CHARS TO THE CPU IS MADE THAT FAILS BOTH
ARE RESET.

DTYP: DEVICE TYPE FOR LOCAL LINES(DISPATCHED ON) (0:18,23)

EBC: ECHO BREAK CHARACTER (0:17,17)

ES: ECHO STRATEGY. IF OFF, DON'T ECHO CHARACTERS (0:10,10)

LDVN: LOCAL DEVICE NUMBER (3:0,7)

LF: LINK FLAG (0:6,7)
0) NRMLNK: IGNORE LQNK FIELD
1) LNKLNK: LQNK FIELD HAS LINKED TO LINE NUMBER
2) CCPLNK: LQNK FIELD HAS PROCESS TO WAKEUP IN CCP MODE
3) ADVLNK: ADVISE MODE LQNK FIELD HAS LINE ADVISING

LFK: LINE FEED KLUDGE (3:9,9)

LNK:* [LNKBIT] IF ON LINK OUTPUT (0:7,7)

LOK: LINK OK (3:8,8)

LPOS: CHAR POS IN LINE (1:8,15)

LQNK: LINKED TO LINE (2:11,23)

MDTYP:* DEVICE TYPE (0:21,23)
0) NULL
1) MODEL 37 TELETYPE
2) MODEL 35 TELETYPE

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                 3) IBM 2740 SELECTRIC
NIQ:             NO INPUT REQUESTS DESIRED   (1:1,1)
NOQ:             NO OUTPUT REQUESTS DESIRED   (1:0,0)
PROC:            PROCESS   (3:11,23)
QUITC:           QUIT CHARACTER   (1:16,23)
RCNO:            REMOTE CONCENTRATOR NUMBER   (0:11,16)
                 RCNO=0 MEANS LOCAL BIT SCANNED TTYS
                 RCNO=1 MEANS LOCAL 2400 BAUD LINES
REF:             RESUME ECHO FLAG   (2:8,10)
                 0) NORMAL CASE
                  1 TO 6) RESUME AFTER N INPUT BLOCKS
                  7) RESUME AFTER 7 INPUT BLOCKS
TABTY:           TAB TYPE   (1:2,7)
WIC:             WAKEUP IF INPUT WAKEUP CONDITION IS VALID   (0:9,9)
WOC:             WAKEUP IF OUTPUT WAKEUP CONDITION IS VALID   (0:8,8)
WS:              WAKEUP STRATEGY - SAME VALUES AS BS. NOTE: WS>=BS   (0:2,3)
XWT:             WAIT TIME FOR GUARANTEED POOR RESPONSE   (2:0,3)
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**  BASE ADDRESS:  MTAA
**  ENTRY ADDRESS:  MTAE
**  BASE ADDRESS EQUAL TO:  0 MOD MTAM(4)
**  NUMBER OF ENTRIES:  ONE FOR EACH LINE PAIR
**  USE:  CONTAINS INFORMATION COMMON TO A LINE PAIR
**  ENTRY INDEXED BY:  LINE NUMBER /2
**  INITIALIZATION:  ALL ENTRIES MUST BE INITIAIZED
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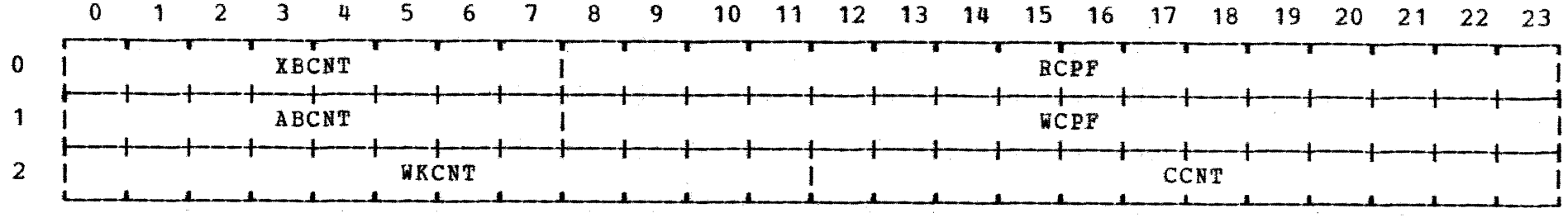
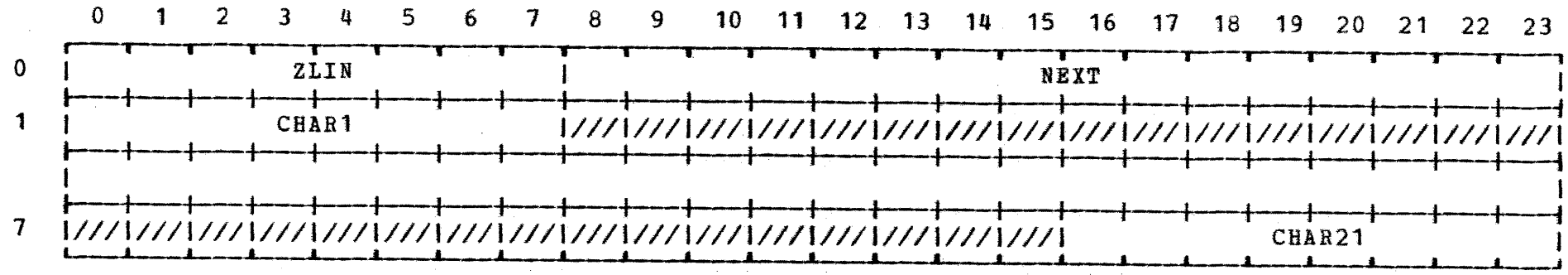
MAIN POINTER TABLE - 2 BLOCKS INPUT, THEN OUTPUT(MTCA,MTCE/2=1)



ABCNT: ACTUAL BUFFER COUNT (1:0,7)
CCNT: CHARACTER COUNT (2:12,23)
RCPF: READ CHARACTER POINTER (0:8,23)
WCPF: WRITE CHARACTER POINTER (1:8,23)
WKCNT: WAKEUP CHARACTER COUNT (2:0,11)
XBCNT: MAXIMUM BUFFER COUNT (0:0,7)

** BASE ADDRESS: MTCA
** BASE ADDRESS EQUAL TO: 1 MOD MTCM(2)
** NUMBER OF ENTRIES: 1 FOR EACH LINE (2 FOR EACH LINE PAIR)
** USE: CONTAINS INFORMATION UNIQUE TO A LINE
** ENTRY INDEXED BY: LINE NUMBER
** INITIALIZATION: ALL ENTRIES, (RCP=WCP=CCNT=ABCNT=0))

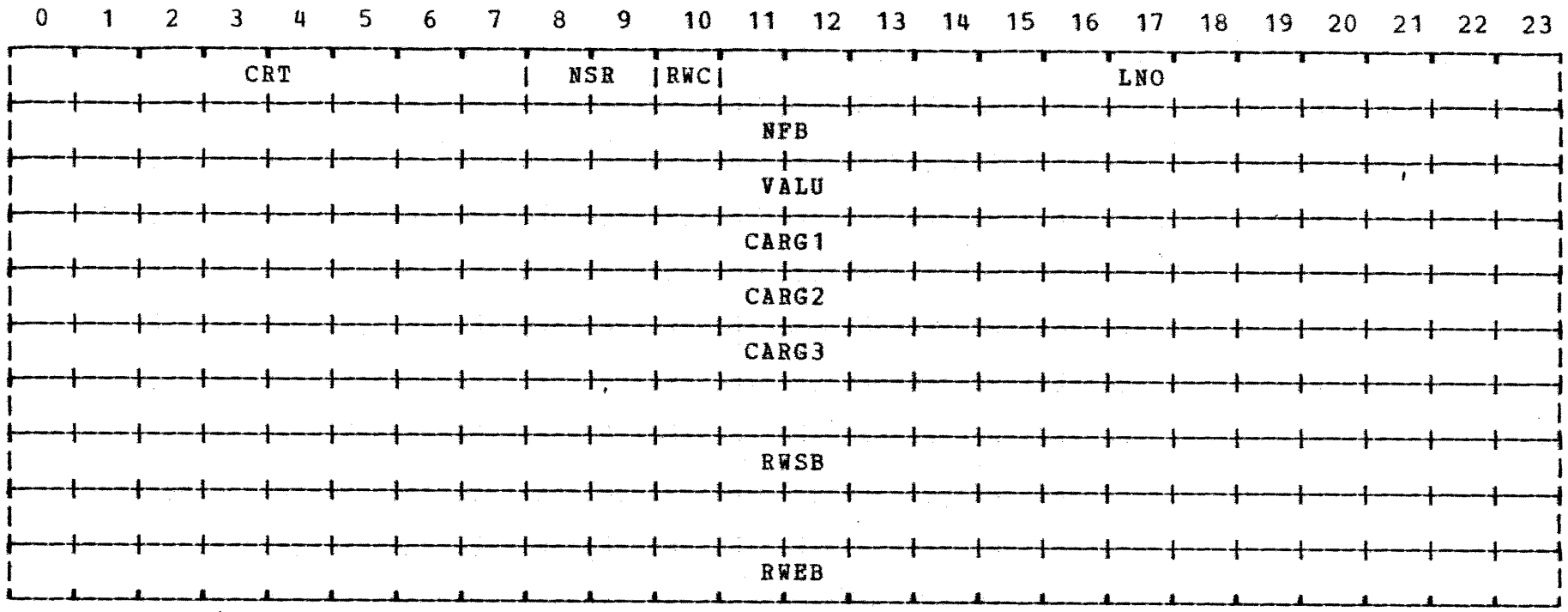
CHARACTER BUFFER FORMAT (BUF0,/32)



CHAR1: FIRST CHAR IN BUFFER (1:0,7)
CHAR21: TWENTY-FIRST CHARACTER (7:16,23)
NEXT: NEXT BUFFER POINTER (0:8,23)
ZLIN: LINE NUMBER MOD 256 (USED TO DETECT ERRORS) (0:0,7)

** BASE ADDRESS: BUF0
** ENTRY ADDRESS: -
** BASE ADDRESS EQUAL TO: 0 MOD CBOM (32)
** NUMBER OF ENTRIES: ENOUGH FOR DEMAND
** USE: CONTAINS CHARACTERS. POINTED TO BY LINE TABLE
** ENTRY INDEXED BY: POINTER FROM PREVIOUS BUFFER
** INITIALIZATION: FREELIST OF BUFFERS LINKED THROUGH NEXT

CPUIT - THE CPU INTERFACE TABLE (CPUIT,/16)



CARG1: FIRST SPECIAL ARGUMENT LOCATION (43B) (35:0,23)
CARG2: SECOND SPECIAL ARGUMENT LOCATION (44B) (36:0,23)
CARG3: THIRD SPECIAL ARGUMENT LOCATION (45B) (37:0,23)
CRT: CPU REQUEST TYPE (32:0,7)

0 NULL REQUEST
1 WST (WRITE STRING)
2 RCND (READ CHARACTER NON DESTRUCTIVELY)
3 RSTB (READ STRING TO BREAK CHARACTER)
4 MBLK(MOVE MEMORY BLOCK)
5 IG (IGNORE NON CPU REQUESTS)
6 NIG (NO LONGER IGNORE NON - CPU REQUESTS)
7 SCF (PUTFIELD)
8 LCF (GETFIELD)
9 STR (STORE CHIO REGISTERS)
10 LDR (LOAD CHIO REGISTER)
11 RTUPDATE (UPDATE REAL TIME CLOCK IN CORE)
12 DOAPOT
13 DOAPIN

LNO: LINE NUMBER FOR REQUEST (32:11,23)
NFB: NUMBER OF FREE BUFFERS (41B) (33:0,23)

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NSR:            NOT SATISFIED RETURN      (32:8,9)
                 0 NORMAL RETURN
                 1 FIRST ABNORMAL RETURN
                 2 SECOND ABNORMAL RETURN (RARELY USED)
RWC:            [RWCH] REQUEST WAITING FOR CHIO    (32:10,10)
RWEB:           END OF A 7 WORD STRING BUFFER    (47:0,23)
                  THE READ/WRITE STRING BUFFER
RWSB:           FIRST OF A 7 WORD STRING BUFFER    (41:0,23)
VALU:           VALUE OF CHIO CALL(42B)    (34:0,23)



**  BASE ADDRESS:  CPUIT EXISTS IN ABSOLUTE CORE FROM 40B TO 100B.
**  ENTRY ADDRESS:
**  BASE ADDRESS EQUAL TO:  40B
**  NUMBER OF ENTRIES:  1
**  USE:  COMMUNICATIONS REGION BETWEEN CPU,CHIO
**  ENTRY INDEXED BY:
**  INITIALIZATION:  INITIALIZATION RWCH=0
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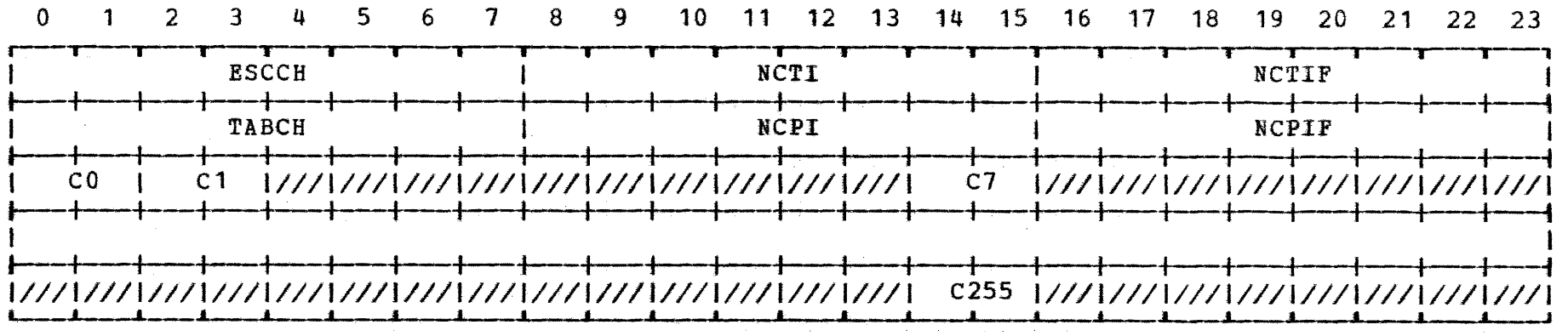
DEVICE TABLE ONE PER DEVICE TYPE ((DVTBA,LB24T),DVTBE,/4)



C0: CHARACTER TYPE FOR 0TH CHARACTER (2:0,1)
0) ALPHANUMBERIC CHARACTER (A-Z 0-9)
1) PUNCTIUATION CHARACTERS (,.:*.)(ETC)
2) ECHOABLE CONTROL CHARACTERS (CARRAIGE RETURN, LINE FEED)
3) NON ECHOABLE CONTROL CHARACTERS (CONTROL A ETC.)

C1: CHARACTER TYPE OF FIRST CHARACTER (2:2,3)

C255: LAST CHARACTER TYPE (33:14,15)

C7: SEVENTH CHARACTER TYPE (2:14,15)

ESCCH: ESCAPE CHARACTER FOR DEVICE (0:0,7)

NCPI: NUMBER OF CHARACTERS PER INTERVAL (1:8,15)

NCPIF: NCPI FRACTION (1:16,23)

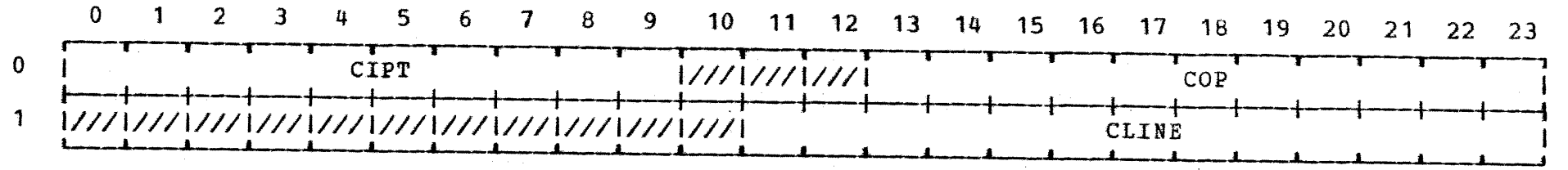
NCTI: NUMBER OF CHARACTER THIS INTERVAL (0:8,15)

NCTIF: NCTI FRACTION (0:16,23)
ALGORITHM: EACH CLOCK TICK:
NCTI.NCTIF ← NCTIF + NCPI.NCPIF

TABCH: TAB CHARACTER FOR DEVICE (1:0,7)

** BASE ADDRESS: DVTBA
** ENTRY ADDRESS: DVTBE
** BASE ADDRESS EQUAL TO: 0 MOD DVTBM(4)
** NUMBER OF ENTRIES: 1 PER DEVICE TYPE (CURRENTLY 3)
** USE: CONTAINS INFORMATION UNIQUE TO DEVICE
** ENTRY INDEXED BY: DEVICE TYPE NUMBER*36 - SEE DEVICE TYPE FOR PUBLIC
** LINE TABLE
** INITIALIZATION: ALL (IGNORE NC(T,P)I(F) IN PHASE 1)

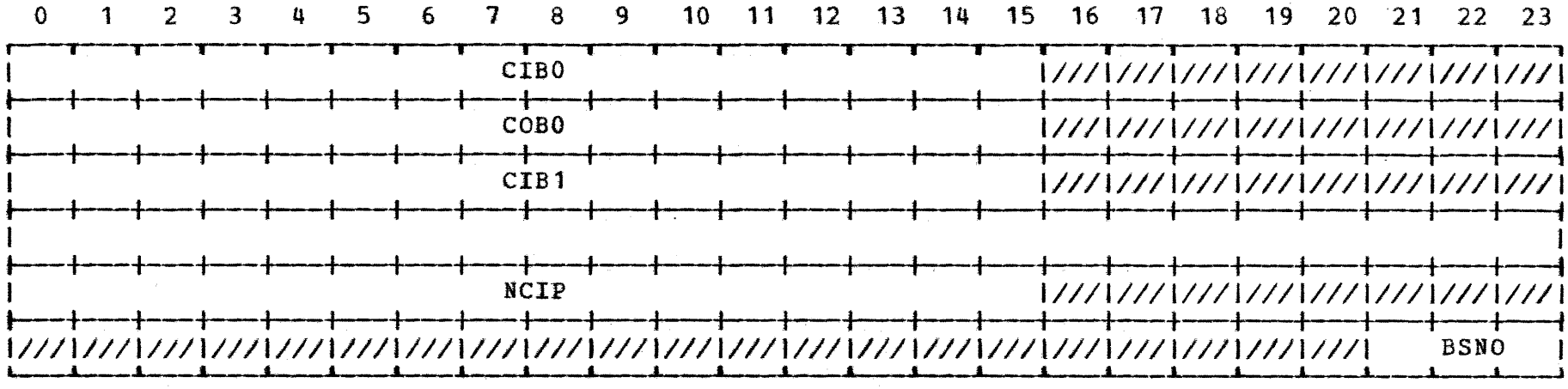
LOW SPEED DEVICE BUFFER TABLE (LDVTA,LDVTE,4)



ABC:*	[CIPX] BIT SHIFTED OUT OF INPUT CHARACTER (0:9,9)
CIP2:*	MASK USED IN DID FOR 2741'S (0:1,9)
CIP:*	CHARACTER INPUT IN PROGRESS (0:1,8)
CIPT:	BOTH CIP AND CIPX (0:0,9)
CIPY:*	(0:8,9)
CLINE:	CPU LINE NUMBER (1:11,23)
COP35:*	(0:13,14)
COP:	CHARACTER OUTPUT IN PROGRESS (0:13,23)
COP:*	[COP37] (0:14,14)
HCO:*	[HCOP] HIGH BIT CHARACTER IN COP FIELD (0:13,13)
HCOP2:*	HIGH ORDER 2 BITS OF COP FOR 2741 (0:13,14)
IPX:*	[CIPX2] MASK USED IN DID FOR 2741'S (0:8,8)
OP4:*	[COP41] (0:15,15)

** BASE ADDRESS: LDVTA
** ENTRY ADDRESS: LDVTE
** BASE ADDRESS EQUAL TO: 0 MOD LDVTM (4)
** NUMBER OF ENTRIES: 1 FOR EACH LOCAL DEVICE
** USE: USED FOR LOCAL BIT SCANNING AND 2400 BAUD LINES
** ENTRY INDEXED BY: LOCAL LINE NUMBER
** INITIALIZATION: COP=0, CLINE

LOCAL DEVICE BIT TABLE (LBTBA,LBTBE,/16)



BSNO: BIT SLICE NUMBER (15:21,23)
LBTBA - DEVICE TYPE CONTAINS BSNO;
CIB0: CHARACTER INPUT BIT SLICE 0 (0:0,15)
CIB1: CHARACTER INPUT BIT SLICE 1 (2:0,15)
COB0: CHARACTER OUTPUT BIT SLICE 0 (1:0,15)
NCIP: NEXT CHARACTER INPUT; (14:0,15)

** BASE ADDRESS: LBTBA
** ENTRY ADDRESS: LBTBE
** BASE ADDRESS EQUAL TO: 0 MOD LBTBM (16)
** NUMBER OF ENTRIES: 1 PER 24 LOCAL LINES
** USE: USED TO FIND TTYS TO BIT SCAN
** ENTRY INDEXED BY: DEVICE TYPE - 1
** INITIALIZATION: BSNO=0, NCIP=ALL ONES