

```

000.000      1 H8410 EQU 0 ASSEMBLE FOR H8-4 CARD INTERFACE
              3 *** LPDVD - LINE PRINTER DEVICE DRIVER
              4 *
              5 * G. A. CHANDLER 24-AUG-78
              6 *
              7 * Copyright 79.11.15 for:
              8 *
              9 * Heath Co.
             10 * Benton Harbor, MI
             11 * 49022
             12 *

```

```

             14 ** LPDVD IS THE DEVICE DRIVER FOR THE DEVICE
             15 *
             16 * LP:
             17 *
             18 * LP: is a H-24 printer interfaced via an H-8-4 card (or equivalent,)
             19 * at the configured port which may be changed by the set option.
             20 *

```

```

000.000      22 XTEXT HOSDEF

```

```

            24X ** HOSDEF - DEFINE HOS PARAMETER.
            25X *
            26X *
            27X *

```

```

000.026      28X VERS EQU 1*16+6 VERSION 1.6

```

```

000.377      30X SYSCALL EQU 3770 SYSCALL INSTRUCTION

```

```

000.000      33X ORG 0

```

```

            34X *
            35X * RESIDENT FUNCTIONS
            36X *

```

```

000.000      37X .EXIT DS 1 EXIT (MUST BE FIRST)

```

```

000.001      38X .SCIN DS 1 SCIN

```

```

000.002      39X .SCOUT DS 1 SCOUT

```

```

000.003      40X .PRINT DS 1 PRINT

```

```

000.004      41X .READ DS 1 READ

```

```

000.005      42X .WRITE DS 1 WRITE

```

```

000.006      43X .CONSL DS 1 SET/CLEAR CONSOLE OPTIONS

```

```

000.007      44X .CLRCD DS 1 CLEAR CONSOLE BUFFER

```

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000.010      45X .LOADO DS 1 LOAD AN OVERLAY

```

```

000.011      46X .VERS DS 1 RETURN HOS VERSION NUMBER

```

```

000.012      47X .SYSRES DS 1 PRECEDING FUNCTIONS ARE RESIDENT

```

```

            48X *
            49X *

```

	50X *	*HDQSOVLO.SYS*	FUNCTIONS
	51X		
000.040	52X	ORG 40A	
	53X		
000.040	54X	.LINK DS 1	LINK (MUST BE FIRST)
000.041	55X	.CTLG DS 1	CTL-C
000.042	56X	.OPENR DS 1	OPENR
000.043	57X	.OPENW DS 1	OPENW
000.044	58X	.OPENU DS 1	OPENU
000.045	59X	.OPENC DS 1	OPENC
000.046	60X	.CLOSE DS 1	CLOSE
000.047	61X	.POSIT DS 1	POSITION
000.050	62X	.DELET DS 1	DELETE
000.051	63X	.RENAM DS 1	RENAME
000.052	64X	.SETTP DS 1	SETTOP
000.053	65X	.DECODE DS 1	NAME DECODE
000.054	66X	.NAME DS 1	GET FILE NAME FROM CHANNEL
000.055	67X	.CLEAR DS 1	CLEAR CHAN
000.056	68X	.CLEARA DS 1	CLEAR ALL CHANS
000.057	69X	.ERROR DS 1	LOOKUP ERROR
000.060	70X	.CHFLG DS 1	CHANGE FLAGS
000.061	71X	.DISMT DS 1	FLAG SYSTEM DISK DISMOUNTED
000.062	72X	.LOADD DS 1	LOAD DEVICE DRIVER
	73X		
	74X		

	75X *	*HDQSOVLI.SYS*	FUNCTIONS
	76X		
000.200	77X	ORG 2000	
	78X		
000.200	79X	.MOUNT DS 1	MOUNT (MUST BE FIRST)
000.201	80X	.DMOUN DS 1	DISMOUNT
000.202	81X	.MONMS DS 1	MOUNT/NO MESSAGE
000.203	82X	.DMNMS DS 1	DISMOUNT/NO MESSAGE
000.204	83X	.RESET DS 1	RESET = DISMOUNT/MOUNT OF UNIT
000.205	84	XTEXT ASCII	

	86X **	ASCII CHARACTER EQUIVALENCES
	87X	
000.015	88X	CR EQU 13 CARRIAGE RETURN
000.012	89X	LF EQU 10 LINE FEED
000.200	90X	NULL EQU 2000 PAD CHARACTER
000.000	91X	NUL2 EQU 0
000.007	92X	BELL EQU 7 BELL CHARACTER
000.177	93X	RUBOUT EQU 1770
000.010	94X	BKSP EQU 100 CTL-H
000.026	95X	C.SYN EQU 260 SYNC
000.002	96X	C.STX EQU 2 STX
000.047	97X	QUOTE EQU 470
000.011	98X	TAB EQU 110
000.033	99X	ESC EQU 330
000.012	100X	NL EQU 120 NEW LINE (HDQS SYSTEMS)
000.212	101X	ENL EQU NL+2000 NL + END-OF-LINE-FLAG
000.014	102X	FF EQU 140 FORM FEED
000.001	103X	CTLA EQU 010 CTL-A
000.002	104X	CTLB EQU 020 CTL-B

ASCII

000.003	105X	CTLG	EQU	030	CTL-G
000.004	106X	CTLD	EQU	040	CTL-D
000.017	107X	CTLO	EQU	170	CTL-O
000.020	108X	CTLP	EQU	200	CTL-P
000.021	109X	CTLQ	EQU	210	CTL-Q
000.023	110X	CTLS	EQU	230	CTL-S
000.032	111X	CTLZ	EQU	320	CTL-Z
000.205	112	XTEXT	DDDEF		

114X \*\* DEVICE DRIVER COMMUNICATION FLAGS.

115X \*

000.000	116X				
	117X	ORG	0		
	118X				
000.000	119X	DC:REA	DS	1	READ
000.001	120X	DC:WRI	DS	1	WRITE
000.002	121X	DC:REK	DS	1	READ REGARDLESS
000.003	122X	DC:OPR	DS	1	OPEN FOR READ
000.004	123X	DC:OPW	DS	1	OPEN FOR WRITE
000.005	124X	DC:OPU	DS	1	OPEN FOR UPDATE
000.008	125X	DC:CLO	DS	1	CLOSE
000.007	126X	DC:ABT	DS	1	ABORT
000.010	127X	DC:MOU	DS	1	MOUNT DEVICE
000.011	128X	DC:LOD	DS	1	LOAD DEVICE DRIVER
000.012	129X	DC:MAX	DS	1	MAXIMUM ENTRY INDEX
000.013	130	XTEXT	MTR		

133X \*\* MTR - PAM/B EQUIVALENCES.

134X \*  
135X \* THIS DECK CONTAINS SYMBOLIC DEFINITIONS USED TO  
136X \* MAKE USE OF THE PAM/B CODE AND CONTROL BYTES.

138X \*\* IO PORTS

	139X			
000.360	140X	IP.PAD	EQU 3600	PAD INPUT PORT
000.360	141X	OP.CTL	EQU 3600	CONTROL OUTPUT PORT
000.360	142X	OP.DIG	EQU 3600	DIGIT SELECT OUTPUT PORT
000.361	143X	OP.SEG	EQU 3610	SEGMENT SELECT OUTPUT PORT

145X \*\* FRONT PANEL CONTROL BITS.

	146X			
000.020	147X	CB.SSI	EQU 00010000B	SINGLE STEP INTERRUPT
000.040	148X	CB.MTL	EQU 00100000B	MONITOR LIGHT
000.100	149X	CB.CLI	EQU 01000000B	CLOCK INTERRUPT ENABLE
000.200	150X	CB.SPK	EQU 10000000B	SPEAKER ENABLE

152X \*\* MONITOR MODE FLAGS.

	153X			
000.000	154X	DM.MR	EQU 0	MEMORY READ
000.001	155X	DM.MW	EQU 1	MEMORY WRITE
000.002	156X	DM.RR	EQU 2	REGISTER READ
000.003	157X	DM.RW	EQU 3	REGISTER WRITE

159X \*\* USER OPTION BITS.

	160X	*		
	161X	*		THESE BITS ARE SET IN CELL .MFLAG.
	162X			
000.200	163X	UD.HLT	EQU 10000000B	DISABLE HALT PROCESSING
000.100	164X	UD.NFR	EQU CB.CLI	NO REFRESH OF FRONT PANEL
000.002	165X	UD.DDU	EQU 00000010B	DISABLE DISPLAY UPDATE
000.001	166X	UD.CLK	EQU 00000001B	ALLOW PRIVATE INTERRUPT PROCESSING

168X \*\* MONITOR IDENTIFICATION FLAGS

	169X	*		
	170X	*		THESE BYTES IDENTIFY THE ROM MONITOR.
	171X	*		THEY ARE THE VARIOUS VALUES OF LOCATION .IDENT
	172X			
000.021	173X	M.PAM8	EQU 0210	'LXI' INSTRUCTION AT 000.000 IN PAM-B
000.303	174X	M.FOX	EQU 3030	'JMP' INSTRUCTION AT 000.000 IN FOX ROM

176X \*\* ROUTINE ENTRY POINTS.

177X \*

178X

000.000	179X	.IDENT	EQU	0000A	IDENTIFICATION LOCATION
000.053	180X	.DLY	EQU	0053A	DELAY
001.267	181X	.LOAD	EQU	1267A	TAPE LOAD
001.374	182X	.DUMP	EQU	1374A	TAPE DUMP
002.136	183X	.ALARM	EQU	2136A	ALARM ROUTINE
002.140	184X	.HORN	EQU	2140A	HORN
002.172	185X	.CTC	EQU	2172A	CHECK TAPE CHECKSUM
002.205	186X	.TPERR	EQU	2205A	TAPE ERROR ROUTINE
002.264	187X	.FCHL	EQU	2264A	FCHL INSTRUCTION
002.265	188X	.SRS	EQU	2265A	SCAN RECORD START
002.325	189X	.RNP	EQU	2325A	READ NEXT PAIR
002.331	190X	.RNB	EQU	2331A	READ NEXT BYTE
002.347	191X	.CRC	EQU	2347A	CRC-16 CALCULATOR
003.017	192X	.WNP	EQU	3017A	WRITE NEXT PAIR
003.024	193X	.WNB	EQU	3024A	WRITE NEXT BYTE
003.122	194X	.DOB	EQU	3122A	DECODE FOR OCTAL DISPLAY
003.260	195X	.RCK	EQU	3260A	READ CONSOLE KEYS
003.358	196X	.DOBA	EQU	3358A	SEGMENT CODE TABLE

198X \*\* RAM CELLS USED BY HBMTX.

199X \*

200X

040.000	201X	.START	EQU	40000A	START DUMP ADDRESS
040.002	202X	.IOWRK	EQU	40002A	IN OR OUT INSTRUCTION
040.005	203X	.REGI	EQU	40005A	DISPLAYED REGISTER INDEX
040.008	204X	.DISPRD	EQU	40008A	PERIOD FLAG BYTE
040.007	205X	.DISPMOD	EQU	40007A	DISPLAY MODE
040.010	206X	.MFLAG	EQU	40010A	USER OPTION BYTE
040.011	207X	.CTLFLG	EQU	40011A	PANEL CONTROL BYTE
040.013	208X	.ALEDS	EQU	40013A	ABUSS LEDS
040.021	209X	.BLEDS	EQU	40021A	DBUSS LEDS
040.024	210X	.ABUSS	EQU	40024A	ABUSS REGISTER
040.027	211X	.CRCSUM	EQU	40027A	CRCSUM WORD
040.031	212X	.TPERRX	EQU	40031A	TAPE ERROR EXIT VECTOR
040.033	213X	.TICCNT	EQU	40033A	CLOCK TICK COUNTER
040.035	214X	.REGPTR	EQU	40035A	REGISTER POINTER
040.037	215X	.UIVEC	EQU	40037A	USER INTERRUPT VECTORS
000.013	216	.XTEXT	HOSEQU		

218X \*\* HDOS SYSTEM EQUIVALENCES.

219X \*

220X

024.000	221X	S.GRT0	EQU	24000A	SYSTEM AREA FOR GRT0
025.000	222X	S.GRT1	EQU	25000A	SYSTEM AREA FOR GRT1
026.000	223X	S.GRT2	EQU	26000A	SYSTEM AREA FOR GRT2
	224X				
030.000	225X	ROMBOOT	EQU	30000A	ROM BOOT ENTRY
	226X				

PAM/B. EQUIVALENCES.

HDOSERU

18:30:57 1A-MAY-80

040.100	227X	ORG	40100A	FREE SPACE FROM PAM-8	
	228X				
040.100	229X	DS	8	JUMP TO SYSTEM EXIT	
040.110	230X	B.CON	DS	16	DISK CONSTANTS
040.130	231X	SYDD	EQU	*	SYSTEM DISK ENTRY POINT
040.130	232X	D.VEC	DS	24*3	SYSTEM ROM ENTRY VECTORS
040.240	233X	D.RAM	DS	31	SYSTEM ROM WORK AREA
040.277	234X	S.VAL	DS	36	SYSTEM VALUES
040.343	235X	S.INT	DS	115	SYSTEM INTERNAL WORK AREAS
041.124	236X	DS	16		
041.146	237X	S.SOVR	DS	2	STACK OVERFLOW WARNING
041.150	238X	DS	42200A-*	SYSTEM STACK	
001.032	239X	STACKL	EQU	*-S.SOVR	STACK SIZE
	240X				
042.200	241X	STACK	EQU	*	LWA+1 SYSTEM STACK
042.200	242X	USERFWA	EQU	*	USER FWA
042.200	243	XTEXT	DIRDEF		

245X \*\* DIRECTORY ENTRY FORMAT.

	246X				
000.000	247X	ORG	0		
	248X				
	249X				
000.377	250X	DF.EMP	EQU	3770	FLAGS ENTRY EMPTY
000.376	251X	DF.CLR	EQU	3760	FLAGS ENTRY EMPTY, REST OF DIR ALSO CLEAR
	252X				
000.000	253X	DIR.NAM	DS	8	NAME
000.010	254X	DIR.EXT	DS	3	EXTENSION
000.013	255X	DIR.PRO	DS	1	PROJECT
000.014	256X	DIR.VER	DS	1	VERSION
000.015	257X	DIRIDL	EQU	*	FILE IDENTIFICATION LENGTH
	258X				
000.015	259X	DIR.CLU	DS	1	CLUSTER FACTOR
000.016	260X	DIR.FLG	DS	1	FLAGS
000.017	261X	DS	1	RESERVED	
000.020	262X	DIR.FGM	DS	1	FIRST GROUP NUMBER
000.021	263X	DIR.LGN	DS	1	LAST GROUP NUMBER
000.022	264X	DIR.LSI	DS	1	LAST SECTOR INDEX (IN LAST GROUP)
000.023	265X	DIR.CRD	DS	2	CREATION DATE
000.025	266X	DIR.ALD	DS	2	LAST ALTERATION DATE
	267X				
000.027	268X	DIRELEN	EQU	*	DIRECTORY ENTRY LENGTH
000.027	269	XTEXT	ESINT		

271X \*\* S.INT - SYSTEM INTERNAL WORKAREA DEFINITIONS.

272X \*  
 273X \* THESE CELLS ARE REFERENCED BY OVERLAYS AND MAIN CODE, AND  
 274X \* MUST THEREFORE RESIDE IN FIXED LOW MEMORY.

	275X			
	276X			
040.343	277X	ORG	S.INT	

ESINT

	278X				
	279X	**	CONSOLE STATUS FLAGS		
	280X				
040.343	281X	S.CDB	DS	1	CONSOLE DESCRIPTOR BYTE
000.000	282X	CDB.H85	EQU	00000000B	
000.001	283X	CDB.H84	EQU	00000001B	=0 IF H8-5, =1 IF H8-4
040.344	284X	S.BAUD	DS	2	[0-14] H8-4 BAUD RATE, =0 IF H8-5
	285X	*			[15] =1 IF BAUD RATE => 2 STOP BITS
	286X				
	287X	**	TABLE ADDRESS WORDS		
	288X				
040.346	289X	S.DLINK	DS	2	ADDRESS OF DATA IN HDOS CODE
040.350	290X	S.OFWA	DS	2	FWA OVERLAY TABLE
040.352	291X	S.CFWA	DS	2	FWA CHANNEL TABLE
040.354	292X	S.DFWA	DS	2	FWA DEVICE TABLE
040.356	293X	S.RFWA	DS	2	FWA RESIDENT HDOS CODE
	294X				
	295X	**	DEVICE DRIVER DELAYED LOAD FLAGS		
	296X				
040.360	297X	S.DDLDA	DS	2	DRIVER LOAD ADDRESS (HIGH BYTE=0 IF NO LOAD PENDING)
040.362	298X	S.DDLEN	DS	2	CODE LENGTH IN BYTES
040.364	299X	S.DDGRP	DS	1	GROUP NUMBER FOR DRIVER
040.365	300X		DS	1	HOLD PLACE
	301X	*S.DDSEC	DS	2	SECTOR NUMBER FOR DRIVER ( * OBSOLETE ! * )
040.366	302X	S.DDSTA	DS	2	DEVICE'S ADDRESS IN DEVLST+DEV.RES
040.370	303X	S.DDOPC	DS	1	OPEN OPCODE PENDING
	304X				
	305X	**	OVERLAY MANAGEMENT FLAGS		
	306X				
000.001	307X	OVL.IN	EQU	00000001B	IN MEMORY
000.002	308X	OVL.RES	EQU	00000010B	PERMINANTLY RESIDENT
000.014	309X	OVL.NUM	EQU	00001100B	OVERLAY NUMBER MASK
000.200	310X	OVL.UCS	EQU	10000000B	USER CODE SWAPPED FOR OVERLAY
	311X				
040.371	312X	S.OVLFL	DS	1	OVERLAY FLAG
040.372	313X	S.UCSF	DS	2	FWA SWAPPED USER CODE
040.374	314X	S.UCSL	DS	2	LENGTH SWAPPED USER CODE
040.376	315X	S.OVLS	DS	2	SIZE OF OVERLAY CODE
041.000	316X	S.OVLE	DS	2	ENTRY POINT OF OVERLAY CODE
	317X				
041.002	318X	S.SSN	DS	2	SWAP AREA SECTOR NUMBER
041.004	319X	S.OSN	DS	2	OVERLAY SECTOR NUMBER
	320X				
	321X	*	SYSCALL PROCESSING WORK AREAS		
	322X				
041.006	323X	S.CACC	DS	1	(ACC) UPON SYSCALL
041.007	324X	S.CODE	DS	1	SYSCALL INDEX IN PROGRESS
	325X				
	326X	*	JUMPS TO ROUTINES IN RESIDENT HDOS CODE		
	327X				
041.010	328X	S.JUMPS	DS	0	START OF BUMP VECTORS
041.010	329X	S.SID	DS	3	JUMP TO STAND-IN DEVICE DRIVER
041.013	330X	S.FASER	DS	3	JUMP TO FATSERK (FATAL SYSTEM ERROR)
041.016	331X	S.DIREA	DS	3	JUMP TO DIREAD (DISK FILE READ)
041.021	332X	S.FCI	DS	3	JUMP TO FCI (FETCH CHANNEL INFO)
041.024	333X	S.SCI	DS	3	JUMP TO SCI (STORE CHANNEL INFO)

## FAM/R EQUIVALENCES.

ESINT

18:31:03 16-MAY-80

041.027	334X S.GUP DS	3	JUMP TO GUP (GET UNIT POINTER)
	335X		
041.032	336X S.MOUNT DS	1	0 IF THE SYSTEM DISK IS MOUNTED
041.033	337X S.DCS DS	1	DEFAULT CLUSTER SIZE-1
	338X		
041.034	339X S.BOOTF DS	1	BOOT FLAGS
000.001	340X BOOT.P EQU	00000001B	EXECUTE PROLOGUE UPON BOOTUP
	341X		
	342X *		STACK VALUE SAVED FOR OVERLAY SYSCALLS
	343X		
041.035	344X S.OV5TK DS	2	VALUE OF SP UPON SYSCALLS USING OVERLAY
	345X		
041.037	346X DS	1	RESERVED
	348X **		ACTIVE I/O AREA.
	349X *		
	350X *		THE AIO.XXX AREA CONTAINS INFORMATION ABOUT THE I/O OPERATION
	351X *		CURRENTLY BEING PERFORMED. THE INFORMATION IS OBTAINED FROM
	352X *		THE CHANNEL TABLE, AND WILL BE RESTORED THERE WHEN DONE.
	353X *		
	354X *		NORMALLY, THE AIO.XXX INFORMATION WOULD BE OBTAINED DIRECTLY
	355X *		FROM VARIOUS SYSTEM TABLES VIA POINTER REGISTERS. SINCE THE
	356X *		8080 HAS NO GOOD INDEXED ADDRESSING, THE DATA IS MANUALLY
	357X *		COPIED INTO THE AIO.XXX CELLS BEFORE PROCESSING, AND
	358X *		BACKDATED AFTER PROCESSING.
	359X		
041.040	360X AIO.VEC DS	3	JUMP INSTRUCTION
041.041	361X AIO.DDA EQU	*-2	DEVICE DRIVER ADDRESS
041.043	362X AIO.FLG DS	1	FLAG BYTE
041.044	363X AIO.GRT DS	2	ADDRESS OF GROUP RESERV TABLE
041.046	364X AIO.SPG DS	1	SECTORS PER GROUP
041.047	365X AIO.CGN DS	1	CURRENT GROUP NUMBER
041.050	366X AIO.CSI DS	1	CURRENT SECTOR INDEX
041.051	367X AIO.LGN DS	1	LAST GROUP NUMBER
041.052	368X AIO.LSI DS	1	LAST SECTOR INDEX
041.053	369X AIO.DTA DS	2	DEVICE TABLE ADDRESS
041.055	370X AIO.DES DS	2	DIRECTORY SECTOR
041.057	371X AIO.DEV DS	2	DEVICE CODE
041.061	372X AIO.UNI DS	1	UNIT NUMBER (0-9)
	373X		
041.062	374X AIO.DIR DS	DIRELEN	DIRECTORY ENTRY
	375X		
041.111	376X AIO.CNT DS	1	SECTOR COUNT
041.112	377X AIO.EOM DS	1	END OF MEDIA FLAG
041.113	378X AIO.EOF DS	1	END OF FILE FLAG
041.114	379X AIO.TFP DS	2	TEMP FILE POINTERS
041.116	380X AIO.CHA DS	2	ADDRESS OF CHANNEL BLOCK (IOC.DBA)

041.120	382X S.SCR	DS	2	SYSTEM SCRATCH AREA ADDRESS
041.122	383	XTEXT	ESVAL	

385X \*\* S.VAL = SYSTEM VALUE DEFINITIONS.

386X \*

387X \* THESE VALUES ARE SET AND MAINTAINED BY THE SYSTEM.

388X \*

389X \* THE DECK HOSEQU MUST BE MODIFIED WHEN THIS IS MODIFIED.

390X

391X

040.277	392X	ORG	S.VAL	
---------	------	-----	-------	--

393X

040.277	394X S.DATE	DS	9	SYSTEM DATE (IN ASCII)
---------	-------------	----	---	------------------------

040.310	395X S.DATC	DS	2	CODED DATE
---------	-------------	----	---	------------

040.312	396X S.TIME	DS	4	TIME FROM MIDNIGHT (IN TICS)
---------	-------------	----	---	------------------------------

040.316	397X S.HIMEM	DS	2	HARDWARE HIGH MEMORY ADDRESS+1
---------	--------------	----	---	--------------------------------

398X

040.320	399X S.SYSM	DS	2	FWA RESIDENT SYSTEM
---------	-------------	----	---	---------------------

400X

040.322	401X S.USRM	DS	2	LWA USER MEMORY
---------	-------------	----	---	-----------------

402X

040.324	403X S.OMAX	DS	2	MAX OVERLAY SIZE FOR SYSTEM
---------	-------------	----	---	-----------------------------

404X

405X

406X \*\* THE FOLLOWING FIVE CELLS SHOULD BE MODIFIED/READ ONLY VIA THE .CONSL SYSCALL

407X

000.200	408X CSL.ECH	EQU	10000000B	SUPPRESS ECHO
---------	--------------	-----	-----------	---------------

000.002	409X CSL.WRP	EQU	00000010B	WRAP LINES AT WIDTH
---------	--------------	-----	-----------	---------------------

000.001	410X CSL.CHR	EQU	00000001B	OPERATE IN CHARACTER MODE
---------	--------------	-----	-----------	---------------------------

411X

000.000	412X I.CSLMD	EQU	0	S.CSLMD IS FIRST BYTE
---------	--------------	-----	---	-----------------------

040.326	413X S.CSLMD	DS	1	CONSOLE MODE
---------	--------------	----	---	--------------

414X

000.200	415X CTP.BKS	EQU	10000000B	TERMINAL PROCESSES BACKSPACES
---------	--------------	-----	-----------	-------------------------------

000.040	416X CTP.MLI	EQU	00100000B	MAP LOWER CASE TO UPPER ON INPUT
---------	--------------	-----	-----------	----------------------------------

000.020	417X CTP.MLO	EQU	00010000B	MAP LOWER CASE TO UPPER ON OUTPUT
---------	--------------	-----	-----------	-----------------------------------

000.010	418X CTP.2SB	EQU	00001000B	TERMINAL NEEDS TWO STOP BITS
---------	--------------	-----	-----------	------------------------------

000.002	419X CTP.BKM	EQU	00000010B	MAP BKSP (UPON INPUT) TO RUBOUT
---------	--------------	-----	-----------	---------------------------------

000.001	420X CTP.TAB	EQU	00000001B	TERMINAL SUPPORTS TAB CHARACTERS
---------	--------------	-----	-----------	----------------------------------

421X

000.001	422X I.CONTY	EQU	1	S.CONTY IS 2ND BYTE
---------	--------------	-----	---	---------------------

000.000	423X	ERRNZ	*-S.CSLMD-I.CONTY	
---------	------	-------	-------------------	--

040.327	424X S.CONTY	DS	1	CONSOLE TYPE FLAGS
---------	--------------	----	---	--------------------

000.002	425X I.CUSOR	EQU	2	S.CUSOR IS 3RD BYTE
---------	--------------	-----	---	---------------------

000.000	426X	ERRNZ	*-S.CSLMD-I.CUSOR	
---------	------	-------	-------------------	--

040.330	427X S.CUSOR	DS	1	CURRENT CURSOR POSITION
---------	--------------	----	---	-------------------------

000.003	428X I.CONWI	EQU	3	S.CONWI IS 4TH BYTE
---------	--------------	-----	---	---------------------

000.000	429X	ERRNZ	*-S.CSLMD-I.CONWI	
---------	------	-------	-------------------	--

040.331	430X S.CONWI	DS	1	CONSOLE WIDTH
---------	--------------	----	---	---------------

431X

000.001	432X CD.FLG	EQU	00000001B	CTL-0 FLAG
---------	-------------	-----	-----------	------------

000.200	433X CS.FLG	EQU	10000000B	CTL-S FLAG
---------	-------------	-----	-----------	------------

434X

PAM/B. EQUIVALENCES.

ESVAL

18:31:07 16-MAY-80

```

000.004 435X I.CONFL EQU 4 S.CONFL IS 5TH BYTE
000.000 436X ERRNZ *-S.CSLMD-I.CONFL
040.332 437X S.CONFL DS 1 CONSOLE FLAGS
         438X
040.333 439X S.CAADR DS 2 ADDRESS FOR ABORT PROCESSING (>256 IF VALID)
040.335 440X S.CCTAB DS 6 ADDR FOR CTL-A, CTL-B, CTL-C PROCESSING
040.343 441 XTEXT ECDEF
    
```

443X \*\* ERROR CODE DEFINITIONS.

```

000.000 444X
000.000 445X DRG 0
000.000 446X DS 1 NO ERROR #0
000.001 447X EC.EOF DS 1 END OF FILE
000.002 448X EC.EDM DS 1 END OF MEDIA.
000.003 449X EC.ILC DS 1 ILLEGAL SYSCALL CODE
000.004 450X EC.CNA DS 1 CHANNEL NOT AVAILABLE
000.005 451X EC.DNS DS 1 DEVICE NOT SUITABLE
000.006 452X EC.IDN DS 1 ILLEGAL DEVICE NAME
000.007 453X EC.IFN DS 1 ILLEGAL FILE NAME
000.010 454X EC.NRD DS 1 NO ROOM FOR DEVICE DRIVER
000.011 455X EC.FNO DS 1 CHANNEL NOT OPEN
000.012 456X EC.ILR DS 1 ILLEGAL REQUEST
000.013 457X EC.FUC DS 1 FILE USAGE CONFLICT
000.014 458X EC.FNF DS 1 FILE NAME NOT FOUND
000.015 459X EC.UND DS 1 UNKNOWN DEVICE
000.016 460X EC.ICN DS 1 ILLEGAL CHANNEL NUMBER
000.017 461X EC.DIF DS 1 DIRECTORY FULL
000.020 462X EC.IFC DS 1 ILLEGAL FILE CONTENTS
000.021 463X EC.NEM DS 1 NOT ENOUGH MEMORY
000.022 464X EC.RF DS 1 READ FAILURE
000.023 465X EC.WF DS 1 WRITE FAILURE
000.024 466X EC.WPV DS 1 WRITE PROTECTION VIOLATION
000.025 467X EC.WP DS 1 DISK WRITE PROTECTED
000.026 468X EC.FAP DS 1 FILE ALREADY PRESENT
000.027 469X EC.DDA DS 1 DEVICE DRIVER ABORT
000.030 470X EC.FL DS 1 FILE LOCKED
000.031 471X EC.FAO DS 1 FILE ALREADY OPEN
000.032 472X EC.IS DS 1 ILLEGAL SWITCH
000.033 473X EC.UUN DS 1 UNKNOWN UNIT NUMBER
000.034 474X EC.FNR DS 1 FILE NAME REQUIRED
000.035 475X EC.DIW DS 1 DEVICE IS NOT WRITABLE (OR WRITE LOCKED)
000.036 476X EC.UNA DS 1 UNIT NOT AVAILABLE
000.037 477X EC.ILV DS 1 ILLEGAL VALUE
000.040 478X EC.ILO DS 1 ILLEGAL OPTION
000.041 479X EC.VPM DS 1 VOLUME PRESENTLY MOUNTED ON DEVICE
000.042 480X EC.NVM DS 1 NO VOLUME PRESENTLY MOUNTED
000.043 481X EC.FOD DS 1 FILE OPEN ON DEVICE
000.044 482X EC.NPM DS 1 NO PROVISIONS MADE FOR REMOUNTING MORE DISKS
000.045 483X EC.DNI DS 1 DISK NOT INITIALIZED
000.046 484X EC.DNR DS 1 DISK IS NOT READABLE
000.047 485X EC.DSC DS 1 DISK STRUCTURE IS CORRUPT
000.050 486X EC.NCV DS 1 NOT CORRECT VERSION OF HDOS
000.051 487X EC.NOS DS 1 NO OPERATING SYSTEM MOUNTED
000.052 488X EC.IOT DS 1 ILLEGAL OVERLAY INDEX
    
```

PAM/8 EQUIVALENCES:

ECDEF

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000.053 489X EC.OTL DS 1 OVERLAY TO LARGE  
 000.054 490 XTEXT PICDEF

492X \*\* PIC FORMAT EQUIVALENCES.

493X  
 000.000 494X ORG 0  
 495X  
 000.000 496X PIC.ID DS 1 3770 = BINARY FILE FLAG  
 000.001 497X DS 1 FILE TYPE (FT.PIC)  
 000.002 498X FIG.LEN.DS 2 LENGTH OF ENTIRE RECORD  
 000.004 499X PIC.PTR DS 2 INDEX OF START OF PIC TABLE  
 500X  
 000.006 501X PIC.COD DS 0 CODE STARTS HERE  
 000.006 502 XTEXT DEVDEF

504X \*\* DEVICE TABLE ENTRYS.

505X  
 000.000 506X ORG 0  
 507X  
 000.000 508X DEV.NAM DS 2 DEVICE NAME  
 000.000 509X DV.EL EQU 00000000B END OF DEVICE LIST FLAG  
 000.001 510X DV.NU EQU 00000001B DEVICE ENTRY NOT IN USE  
 511X  
 000.002 512X DEV.RES DS 1 DRIVER RESIDENSE CODE  
 000.001 513X DR.IM EQU 00000001B DRIVER IN MEMORY  
 000.002 514X DR.PR EQU 00000010B DRIVER PERMINANTLY RESIDENT  
 515X  
 000.003 516X DEV.JMP DS 1 JMP TO PROCESSOR  
 000.004 517X DEV.IDA DS 2 DRIVER ADDRESS  
 000.006 518X DEV.FLG DS 1 FLAG BYTE  
 000.001 519X DT.DD EQU 00000001B DIRECTORY DEVICE  
 000.002 520X DT.CR EQU 00000010B CAPABLE OF READ OPERATION  
 000.004 521X DT.CW EQU 00000100B CAPABLE OF WRITE OPERATION  
 522X  
 000.007 523X DEV.SPG DS 1 SECTORS PER GROUP THIS DEVICE  
 000.010 524X DEV.MUM DS 1 MOUNTED UNIT MASK  
 000.011 525X DEV.MNU DS 1 MAXIMUM NUMBER OF UNITS  
 000.012 526X DEV.UNT DS 2 ADDRESS OF UNIT SPECIFIC DATA TABLE  
 527X  
 000.014 528X DEV.DVL DS 2 DRIVER BYTE LENGTH  
 000.016 529X DEV.DVG DS 1 DRIVER ROUTINE GROUP ADDRESS  
 530X  
 000.017 531X DEVELEN EQU \* DEVICE TABLE ENTRY LENGTH

PAM/8.EQUIVALENCES.

UNT.TAB

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533X \*\* UNIT SPECIFIC DEVICE DATA TABLE ENTRIES

000.000	534X				
	535X	ORG	0		
	536X				
000.000	537X	UNT.FLG DS	1	UNIT SPECIFIC *DEV.FLG*	
000.001	538X	UNT.GRT DS	2	ADDRESS OF GROUP RESERVATION TABLE (IF DT.DD)	
000.003	539X	UNT.GTS DS	2	GRT SECTOR NUMBER	
000.005	540X	UNT.DIS DS	2	DIRECTORY FIRST SECTOR NUMBER	
	541X				
000.007	542X	UNT.SIZ EQU	*	SIZE OF UNIT SPECIFIC DATA TABLE PER UNIT	
000.007	543	XTEXT	DVDDEF		

545X \*\* DEVICE DRIVER EQUIVALENCES.

	546X				
000.307	547X	DVDFLV EQU	3078	DEVICE DRIVER FLAG VALUE	
	548X				
000.006	549X	ORG	PIC.COD	STARTS AT PIC CODE AREA	
	550X				
000.006	551X	DVD.BVD DS	1	MUST BE DVDFLV. FLAGS TO HDOS AS DRIVER	
000.007	552X	DVD.CAP DS	1	DEVICE CAPABILITY FLAG	
000.010	553X	DVD.MUM DS	1	MOUNTED UNIT MASK	
000.011	554X	DVD.MNU DS	1	MAXIMUM NUMBER OF UNITS	
000.012	555X	DVD.UFL DS	8	UNIT SUB-CAPABILITY FLAGS FOR UNITS 0-7	
000.022	556X	DVD.SET DS	1	= DVDFLV IFF DRIVER WILL TAKE SET OPTIONS	
000.023	557X	DS	24	RESERVED, MUST BE 0	
000.053	558X	DVD.STE EQU	*	ENTRY FOR 'SET' INVOCATION	
	559X				
002.000	560X	DVD.ENT EQU	2000A	DRIVER ENTRY POINT (MUST BE MULT OF 256)	
000.053	561	XTEXT	U8250		

563X \*\* 8250 UART CONTROL AND BIT DEFINITIONS.

	564X				
000.350	565X	SC.ACE EQU	350G	SYSTEM CONSOLE PORT IF 8250 ACE	
000.154	566X	AC.DLY EQU	110	220 MILI. SEC. DELAY FOR 8250	
	567X				
000.000	568X	UR.RBR EQU	0	RECEIVER BUFFER REGISTER (READ ONLY)	
	569X				
000.000	570X	UR.THR EQU	0	TRANSMITTER HOLDING REGISTER (WRITE ONLY)	
	571X				
000.000	572X	UR.DLL EQU	0	DIVISOR LATCH (LEAST SIGNIFICANT)	
	573X				
000.001	574X	UR.DLM EQU	1	DIVISOR LATCH (MOST SIGNIFICANT)	
	575X				
000.001	576X	UR.IER EQU	1	INTERRUPT ENABLE REGISTER	
000.001	577X	UC.EDA EQU	00000001B	ENABLE RECEIVED DATA AVAILABLE INTERRUPT	
000.002	578X	UC.TRE EQU	00000010B	ENABLE TRANSMIT HOLD REGISTER EMPTY INTERRUPT	
000.004	579X	UC.RSI EQU	00000100B	ENABLE RECEIVE STATUS INTERRUPT	
000.010	580X	UC.MSI EQU	00001000B	ENABLE MODEM STATUS INTERRUPT	
	581X				
000.002	582X	UR.IIR EQU	2	INTERRUPT IDENTIFICATION REGISTER	

000.001	583X	UC.IIP	EQU	00000001B	INVERTED INTERRUPT PENDING (0 MEANS PENDING)
000.006	584X	UC.IID	EQU	00000110B	INTERRUPT ID
	585X				
000.003	586X	UR.LCR	EQU	3	LINE CONTROL REGISTER
000.000	587X	UC.5BW	EQU	00000000B	5 BIT WORDS
000.001	588X	UC.6BW	EQU	00000001B	6 BIT WORDS
000.002	589X	UC.7BW	EQU	00000010B	7 BIT WORDS
000.003	590X	UC.8BW	EQU	00000011B	8 BIT WORDS
000.004	591X	UC.2SB	EQU	00000100B	TWO STOP BITS SELECTED
000.010	592X	UC.PEN	EQU	00001000B	PARITY COMPUTATION ENABLED
000.020	593X	UC.EPS	EQU	00010000B	EVEN PARITY SELECT
000.040	594X	UC.SKP	EQU	00100000B	STICK PARITY
000.100	595X	UC.SB	EQU	01000000B	SET BREAK
000.200	596X	UC.DLA	EQU	10000000B	DIVISOR LATCH ACCESS
	597X				
000.004	598X	UR.MCR	EQU	4	MODEM CONTROL REGISTER
000.001	599X	UC.BTR	EQU	00000001B	DATA TERMINAL READY
000.002	600X	UC.RTS	EQU	00000010B	REQUEST TO SEND
000.004	601X	UC.DU1	EQU	00000100B	OUT 1
000.010	602X	UC.DU2	EQU	00001000B	OUT 2
000.020	603X	UC.LOB	EQU	00010000B	LOOP
	604X				
000.005	605X	UR.LSR	EQU	5	LINE STATUS REGISTER
000.001	606X	UC.DR	EQU	00000001B	DATA READY
000.002	607X	UC.OR	EQU	00000010B	OVERRUN
000.004	608X	UC.PE	EQU	00000100B	PARITY ERROR
000.010	609X	UC.FE	EQU	00001000B	FRAMING ERROR
000.020	610X	UC.BI	EQU	00010000B	BREAK INTERRUPT
000.040	611X	UC.THE	EQU	00100000B	TRANSMITTER HOLDING REGISTER EMPTY
000.100	612X	UC.TSE	EQU	01000000B	TRANSMITTER SHIFT REGISTER EMPTY
	613X				
000.006	614X	UR.MSR	EQU	6	MODEM STATUS REGISTER
000.001	615X	UC.DCS	EQU	00000001B	DELTA CLEAR TO SEND
000.002	616X	UC.DDR	EQU	00000010B	DELTA DATA SET READY
000.004	617X	UC.TER	EQU	00000100B	TRAILING EDGE OF RING
000.010	618X	UC.DRL	EQU	00001000B	DELTA RECEIVE LINE SIGNAL DETECT
000.020	619X	UC.CYS	EQU	00010000B	CLEAR TO SEND
000.040	620X	UC.DSR	EQU	00100000B	DATA SET READY
000.100	621X	UC.RI	EQU	01000000B	RING INDICATOR
000.200	622X	UC.RLS	EQU	10000000B	RECEIVED LINE SIGNAL DETECT
000.053	623		XTEXT	U8251	

```

626X **      8251 USART BIT DEFINITIONS.
627X *
628X
629X **      PORT ADDRESSES
630X
000.000      631X UDR   EQU    0      DATA REGISTER IS EVEN
000.001      632X USR   EQU    1      STATUS REGISTER IS NEXT
633X
000.372      634X SC.UART EQU   3720     CONSOLE USART ADDRESS (IFF 8251)
635X
636X
637X **      MODE INSTRUCTION CONTROL BITS.
638X
000.100      639X UMI.1B EQU   01000000B    1 STOP BIT
000.200      640X UMI.HB EQU   10000000B    1 1/2 STOP BITS
000.300      641X UMI.2B EQU   11000000B    2 STOP BITS
000.040      642X UMI.PE EQU   00100000B    EVEN PARITY
000.020      643X UMI.PA EQU   00010000B    USE PARITY
000.000      644X UMI.L5 EQU   00000000B    5 BIT CHARACTERS
000.004      645X UMI.L6 EQU   00000100B    6 BIT CHARACTERS
000.010      646X UMI.L7 EQU   00001000B    7 BIT CHARACTERS
000.014      647X UMI.L8 EQU   00001100B    8 BIT CHARACTERS
000.001      648X UMI.1X EQU   00000001B    CLOCK X 1
000.002      649X UMI.16X EQU  00000010B    CLOCK X 16
000.003      650X UMI.64X EQU   00000011B    CLOCK X 64
651X
652X **      COMMAND INSTRUCTION BITS.
653X
000.100      654X UCI.IR EQU   01000000B    INTERNAL RESET
000.040      655X UCI.R0 EQU   00100000B    READER-ON CONTROL FLAG
000.020      656X UCI.ER EQU   00010000B    ERROR RESET
000.004      657X UCI.RE EQU   00000100B    RECEIVE ENABLE
000.002      658X UCI.IE EQU   00000010B    ENABLE INTERRUPTS FLAG
000.001      659X UCI.TE EQU   00000001B    TRANSMIT ENABLE
660X
661X **      STATUS READ COMMAND BITS.
662X
000.040      663X USR.FE EQU   00100000B    FRAMING ERROR
000.020      664X USR.OE EQU   00010000B    OVERRUN ERROR
000.010      665X USR.PE EQU   00001000B    PARITY ERROR
000.004      666X USR.TXE EQU   00000100B    TRANSMITTER EMPTY
000.002      667X USR.RXR EQU   00000010B    RECEIVER READY
000.001      668X USR.TXR EQU   00000001B    TRANSMITTER READY
000.053      669X XTEXT SETCAL
670X
671X **      SETCAL - FIXED ADDRESS ROUTINES IN SET
672X *
673X *      THESE VECTORS ARE FIXED ENTRY POINTS INTO THE
674X *      SET PROGRAM TO UTILIZED BY DEVICE DRIVERS IN
675X *      PROCESSING SET COMMANDS.
676X *
677X *
042.201      678X ORG   USERFW+1
  
```

		679X				
042.201		680X \$SNA	DS	3		
		681X				
042.204		682X \$DCS	DS	3		
		683X				
042.207		684X \$CNA	DS	3		
		685X				
042.212		686X \$FST	DS	3		
		687X				
042.215		688X \$TBL5	DS	3		
		689X				
042.220		690X \$WTBL5	DS	3		
		691X				
042.223		692X \$LBD	DS	3		
		693X				
042.226		694X \$SOP	DS	3		
		695X				
042.231		696X \$PBF	DS	3		
		697X				
042.234		698X \$PBV	DS	3		
		699X				
042.237		700X	DS	60	RESERVED	
		701	CODE	FIC		
		702				
		703	*	CODE HEADER		
		704				
000.006	307	705	DB	DUDFLV	DEVICE DRIVER FLAG VALUE	
000.007	004	706	DB	DT.CW	DEVICE CAPABILITY: WRITE	
000.010	001	707	DB	00000001B	MOUNTED UNIT MASK	
000.011	001	708	DB	1	ONLY 1 UNIT	
000.012	004	709	DB	DT.CW	0: CAPABLE OF WRITE	
000.013		710	DS	7	1-7: IGNORED	
000.022	307	711	DB	DUDFLV		
		712				
000.000		713	ERRNZ	*-23Q		
000.023		714	DS	DVD.STE-23Q	RESERVED AREAS	

717 \*\*\* ASSEMBLY CONSTANTS

718 \*

719 \*

720

721 \*\* FLAG DEFINITIONS

722 \*

723

000.001 724 F.FORM EQU 00000001B FORM-FEED UPON CLOSE

726 \*\* DEFAULT DEVICE DEFINITIONS

727 \*

000.340 728 DFLT.LP EQU 3400 DEFAULT LPO: ADDRESS  
000.030 729 DFLT.BD EQU 30A DEFAULT BAUD RATE = 4800 BAUD  
730  
000.001 731 DFLT.FG EQU F.FORM DEFAULT FLAG: FORM  
000.006 732 DFLT.LI EQU 6 LINES/INCH  
000.204 733 DFLT.WD EQU 132 CHARACTERS/LINE  
000.102 734 DFLT.FL EQU 66 11 INCH FORM  
000.074 735 DFLT.LC EQU 60 LINE COUNT = 60 LINES/PAGE  
736  
000.001 737 DFLT.LX EQU 1 INITIAL LINE INDEX  
000.001 738 DFLT.CX EQU 1 INITIAL COLUMN INDEX

SET CODE

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```

741 *** SET CODE ENTRY POINT
742 *
743 * SET COMMANDS ENTER HERE
744 *
745 * ENTRY: (DE) = LINE POINTER
746 * (A) = UNIT NUMBER
747 *
748 * EXIT: 'C' CLEAR IF OK
749 * 'C' SET IF ERROR
750 * (A) = ERROR CODE
751 *
752 * USES: ALL
753 *
754 *
000.053 755 SETNTR EQU *
000.000 756 ERRNZ *-DVD.STE
000.053 247 757 ANA A
000.054 302 103 000 758 JNZ SET1
000.057 102 759 MOV B,D
000.060 113 760 MOV C,E (BC) = PARAMETER LIST ADDRESS
000.061 021 342 001 761 LXI D,PRCTAB (DE) = PROCESSOR TABLE ADDRESS
000.064 041 200 001 762 LXI H,OPTTAB (HL) = OPTION TABLE ADDRESS
000.067 315 226 042 763 CALL $SOP
000.072 330 764 RC
000.073 315 201 042 765 CALL $SNA
000.076 310 766 RZ AT END OF LINE
000.077 076 040 767 MVI A,EC.ILD ILLEGAL OPTION
000.101 067 768 STC
000.102 311 769 RET
770
000.103 076 033 771 SET1 MVI A,EC.UUN
000.105 067 772 STC
000.106 311 773 RET

```

```

775 *** PROCESSORS
776 *

```

```

778 ** FLAG - PROCESS FLAG OPTIONS
779 *
780 * PROCESS FLAG TYPE OPTION SPECIFICATIONS
781 *
782 *
783 * ENTRY, EXIT, AND USE SAME AS PBF
784
042.231 785 FLAG EQU $PBF PROCESS BYTE FLAGS

```

SET CODE

VAL

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787 \*\* VAL - PROCESS VALUE OPTIONS  
 788 \*  
 789 \* PROCESS VALUE TYPE OPTION SPECIFICATIONS  
 790 \*  
 791 \*  
 792 \* ENTRY, EXIT, AND USE SAME AS PBV  
 793 \*  
 042,234 794 VAL EQU \*PBV PROCESS BYTE VALUES

796 \*\* BAUD - PROCESS BAUD RATE  
 797 \*  
 798 \* PROCESS BAUD RATE OPTION SPECIFICATION.  
 799 \*  
 800 \*  
 801 \* ENTRY: (BC) = TEXT ADDRESS  
 802 \*  
 803 \* EXIT: (BC) = TEXT ADDRESS UPDATED  
 804 \* 'C' CLEAR IF OK  
 805 \* 'C' SET IF ERROR  
 806 \* (A) = ERROR CODE  
 807 \*  
 808 \* USES: ALL  
 809 \*  
 810  
 000,107 076 012 811 BAUD MVI A,10 (A) = DEFAULT RADIX  
 000,111 315 207 042 812 CALL \$CNA  
 000,114 332 132 000 813 JC BAUI  
 000,117 353 814 XCHG (DE) = BAUD RATE  
 000,120 315 223 042 815 CALL \$LBD  
 000,123 302 132 000 816 JNZ BAUI  
 000,126 042 037 004 817 SHLD TLP,BAU SET BAUD RATE WORD  
 000,131 311 818 RET  
 819  
 000,132 076 037 820 BAUI MVI A,EC,ILV ILLEGAL VALUE  
 000,134 047 821 STC  
 000,135 311 822 RET

824 \*\* LPI - PROCESS LINES/INCH OPTION  
 825 \*  
 826 \* INPUT EITHER 6 OR 8 FOR THE LINES/INCH  
 827 \*  
 828  
 000,136 829 LPI EQU \*  
 830  
 000,136 076 012 831 MVI A,10 DEFAULT BASE = 10  
 000,140 315 207 042 832 CALL \$CNA  
 000,143 332 200 000 833 JC LPI1 NOT A GOOD NUMERIC VALUE  
 834  
 000,146 174 835 MOV A,H  
 000,147 247 836 ANA A

LPI

```

000.150 302 200 000 837      JNZ      LPI1      VALUE IS TOO BIG
                                838
000.153 175          839      MOV      A,L
000.154 376 006     840      CPI      6
000.156 332 200 000 841      JC       LPI1      VALUE IS TOO SMALL
                                842
000.161 376 007     843      CPI      7
000.163 312 200 000 844      JZ       LPI1      7 IS NOT LEGAL
                                845
000.166 376 011     846      CPI      8+1
000.170 322 200 000 847      JNC      LPI1      STILL TOO BIG
                                848
                                849 *      PROCESS A LEGAL WIDTH
                                850
000.173 062 041 004 851      STA      TLP,LPI
000.176 247          852      ANA      A          CLEAR CARRY
000.177 311          853      RET
                                854
                                855 *      PROCESS AN ILLEGAL WIDTH
                                856
000.200 076 037     857 LPI1    MVI      A,EC:ILV
000.202 067          858      STC
000.203 311          859      RET

```

861 \*\* HELP - PROCESS HELP OPTION

862 \*

863 \* TYPE VALID OPTIONS ON USER CONSOLE

864 \*

865 \*

866 \*

867 \*

868 \*

869 \*

870 \*

```

000.204 315 136 031 871 HELP  CALL  $TYPTX
000.207 012 012 123 872      DB      'NL,NL,Set Options',NL,NL
000.227 102 101 125 873      DB      'BAUD n      Baud rate',NL
000.253 106 117 122 874      DB      'FORM          Form Feed at Close',NL
000.310 110 105 114 875      DB      'HELP          Type this text',NL
000.335 116 117 106 876      DB      'NOFORM         No Form Feed at Close',NL
000.375 114 105 116 877      DB      'LENGTH n      Lines/Form [4-112]',NL
001.032 114 120 111 878      DB      'LPI n          Lines/Inch',NL
001.057 120 101 107 879      DB      'PAGE n          Lines/Page',NL
001.104 120 117 122 880      DB      'PORT n          Port Number',NL
001.132 127 111 104 881      DB      'WIDTH n         Characters/Line [0-132]',NL
001.174 012 212     882      DB      'NL,ENL
001.176 257          883      XRA     A          CLEAR CARRY
001.177 311          884      RET

```

886 \*\*\* TABLES  
 887 \*  
 888 \*

890 \*\* OPTTAB - OPTION TABLE

891 \*  
 892  
 001.200 341 001 893 OPTTAB DW OPTTAB  
 001.202 006 894 DB 6  
 895  
 001.203 106 117 122 896 DB 'FOR', 'M'+2000, FLAG1, F, FORM, F, FORM  
 001.212 035 004 897 DW TLP.FLG  
 001.214 000 898 DB 0  
 899  
 001.215 116 117 106 900 DB 'NOFOR', 'M'+2000, FLAG1, F, FORM, 0  
 001.224 035 004 901 DW TLP.FLG  
 001.230 000 902 DB 0  
 903  
 001.231 114 105 116 904 DB 'LENGT', 'H'+2000, VALI, 10, 4, 112  
 001.243 043 004 905 DW TLP.LEN  
 906  
 001.245 120 101 107 907 DB 'PAG', 'E'+2000, VALI, 10, 0, 255  
 001.255 044 004 908 DW TLP.LC  
 909  
 001.257 120 117 122 910 DB 'POR', 'T'+2000, VALI, 8, 0, 3770  
 001.267 036 004 911 DW TLP.POR  
 912  
 001.271 127 111 104 913 DB 'WIDT', 'H'+2000, VALI, 10, 0, 132  
 001.302 042 004 914 DW TLP.WID  
 915  
 001.304 102 101 125 916 DB 'BAU', 'D'+2000, BAUDI  
 001.311 000 000 000 917 DB 0, 0, 0, 0, 0  
 918  
 001.316 114 120 311 919 DB 'LP', 'I'+2000, LPII  
 001.322 000 000 000 920 DB 0, 0, 0, 0, 0  
 921  
 001.327 110 105 114 922 DB 'HEL', 'P'+2000, HELPI  
 001.334 000 000 000 923 DB 0, 0, 0, 0, 0  
 924  
 001.341 000 925 OPTTAB DB 0

927 \*\* PRCTAB - PROCESSOR TABLE

928 \*  
 929  
 001.342 930 PRCTAB DS 0  
 931  
 000.000 932 FLAG1 EQU \*-PRCTAB/2  
 001.342 231 042 933 DW FLAG  
 934  
 000.001 935 VALI EQU \*-PRCTAB/2

001.344	234 042	936		DW	VAL
		937			
000.002		938	BAUDI	EGU	*-PRCTAB/2
001.346	107 000	939		DW	BAUD
		940			
000.003		941	LFII	EGU	*-PRCTAB/2
001.350	138 000	942		DW	LPT
		943			
000.004		944	HELPI	EGU	*-PRCTAB/2
001.352	204 000	945		DW	HELP

001.354		947	.	SET	1354A
000.000		948		ERRNZ	*-
001.354		949		DS	DUD:ENT-

```

952 *** LPDVB ENTRY POINT
953 *
954 * ENTRY: (A) = PROCESS CODE
955 * (BC) = BYTE COUNT
956 * (DE) = BUFFER ADDRESS AS PER ROUTINE
957 *
958 * EXIT: (PSW) = 'C' CLEAR IF NO ERRORS
959 * = 'E' SET IF ERROR
960 * (A) = ERROR CODE
961 *
962 * USES: ALL
963 *
964 *
965 *
966 *
002.000 967 LPDVB EQU *
000.000 968 ERRNZ *-DVB,ENT
002.000 376 012 969 CPI DC,MAX
002.002 322 022 002 970 JNC LPDVB1 IF ILLEGAL PROCESS CODE
971
002.005 315 076 031 972 CALL $TBRA ENTRY PROCESSOR
002.010 016 973 DB LPNSUIT-* READ
002.011 113 974 DB LPWRITE-* WRITE
002.012 014 975 DB LPNSUIT-* READR
002.013 013 976 DB LPNSUIT-* OPENR
002.014 027 977 DB LPOPENW-* OPENW
002.015 011 978 DB LPNSUIT-* OPENU
002.016 150 979 DB LPCLOSE-* CLOSE
002.017 013 980 DB LPABORT-* ABORT
002.020 012 981 DB LPABORT-* MOUNT
002.021 020 982 DB LPLOADD-* LOADD
983
002.022 076 012 984 LPDVB1 MVI A,EC,ILR ILLEGAL REQUEST
002.024 067 985 STC
002.025 311 986 RET
987
  
```

```

990 *** LPNSUIT - LINE PRINTER NOT SUITABLE
991 *
992 * ENTRY: NONE
993 *
994 * EXIT: (PSW) = 'C' SET FLAGGING ERROR
995 * (A) = ERROR CODE
996 *
997 * USES: PSW
998 *
999 *
002.026 1000 LPNSUIT EQU *
002.026 076 005 1001 MVI A,EC.DNS DEVICE NOT SUITABLE ERROR CODE
002.030 067 1002 STC
002.031 311 1003 RET
  
```

```

1005 *** LPABORT - LINE PRINTER ABORT
1006 *
1007 * ENTRY: NONE
1008 *
1009 * EXIT: (PSW) = 'C' SET FLAGGING ERROR
1010 * (A) = ERROR CODE
1011 *
1012 * USES: PSW
1013 *
1014 *
002.032 1015 LPABORT EQU *
002.032 315 166 002 1016 CALL LPCLOSE
002.035 076 027 1017 MVI A,EC.DDA DEVICE DRIVER ABORT ERROR CODE
002.037 067 1018 STC
002.040 311 1019 RET
  
```

```

1021 *** LPLOADD - LOAD LP:
1022 *
1023 * LPLOADD PROCESS THE LOAD DEVICE DRIVER ENTRY POINT.
1024 *
1025 *
1026 * ENTRY: NONE
1027 *
1028 * EXIT: NONE
1029 *
1030 * USES: (F)
1031 *
1032 *
002.041 1033 LPLOADD EQU *
002.041 247 1034 ANA A CLEAR CARRY
002.042 311 1035 RET
  
```

```

1038 *** LPOPENW - LINE PRINTER OPEN FOR WRITE
1039 *
1040 * SET UP LINE PRINTER FOR OUTPUT
1041 *
1042 * ENTRY NONE
1043 *
1044 * EXIT (PSW) = 'C' CLEAR => NO ERROR
1045 * 'C' SET => ERROR
1046 * (A) = ERROR CODE
1047 *
1048 * USES ALL
1049 *
1050
002.043 1051 LPOPENW EQU *
1052
002.043 315.072.003 1053 CALL UNITASS
002.046 067 1054 STC ASSUME ERROR
002.047 076.036 1055 MVI A,EC.UNA
002.051 300 1056 RMZ ALREADY ASSIGNED
1057
1058 * FLAG ASSIGNED, INITIALIZE INDICES, AND CTL-S FLAG
1059
002.052 076.200 1060 MVI A,10000000B
002.054 062.034.004 1061 STA TLP.AS
002.057 076.001 1062 MVI A,1
002.061 062.045.004 1063 STA TLP.LX
002.064 062.046.004 1064 STA TLP.CX
1065
1066
1067 * INITIALIZE PORT
1068
002.067 072.036.004 1069 LDA TLP.POR
002.072 052.037.004 1070 LHLD TLP.BAU
002.075 315.302.003 1071 CALL I8250
1072
002.100 072.036.004 1073 LDA TLP.POR
002.103 147 1074 MOV H,A
002.104 056.004 1075 MVI L,HR.MCR
002.106 076.013 1076 MVI A,UC.DTR+UC.RTS+UC.OU2
002.110 315.022.004 1077 CALL OUT SET UP FOR HAND-SHAKE
1078
1079 * INITIALIZE LP:
1080
002.113 315.130.003 1081 CALL INITLP
002.116 076.015 1082 MVI A,CR
002.120 315.241.002 1083 CALL LP.OUTPUT
002.123 311 1084 RET
  
```

```

1087 *** LPWRITE - LINE PRINTER WRITE
1088 *
1089 * WRITE BYTES TO LP: DEVICE
1090 *
1091 *
1092 * ENTRY: (BC) = BYTE COUNT
1093 * (DE) = ADDRESS OF DATA BUFFER
1094 *
1095 * EXIT: (PSW) = 'C' CLEAR => NO ERROR
1096 * = 'C' SET => ERROR
1097 * (A) = ERROR CODE
1098 * (BC) = UNUSED BYTE COUNT
1099 * (DE) = ADDRESS OF NEXT BYTE TO BE WRITTEN
1100 *
1101 * USES: ALL
1102 *
1103
002.124 1104 LPWRITE EQU *
1105
002.124 315 072 003 1106 CALL UNITASS
002.127 067 1107 STC ASSUME ERROR
002.130 076 036 1108 MVI A,EC.UNA
002.132 310 1109 RZ NOT ASSIGNED
1110
002.133 170 1111 LPW1 MOV A,B
002.134 261 1112 ORA C
002.135 310 1113 RZ LAST BYTE WRITTEN
1114
002.136 072 334 040 1115 LDA S,CADDR+1
002.141 247 1116 ANA A
002.142 302 156 002 1117 JNZ LPWS CTL-Z,-A,-B,-C HIT
002.145 032 1118 LDAX D (A) = BYTE TO BE WRITTEN
002.146 315 241 002 1119 CALL LPWUTCH
002.151 023 1120 INX D INCREMENT ADDRESS
002.152 013 1121 DCX B DECREMENT COUNT
002.153 303 133 002 1122 JMP LPW1
1123
002.156 1124 LPWS EQU *
002.156 345 1125 PUSH H
002.157 365 1126 PUSH PSW
002.160 315 205 002 1127 CALL LPCLDS. OUTPUT FORM-FEED
002.163 361 1128 POP PSW
002.164 341 1129 POP H
002.165 311 1130 RET
    
```

```

1133 *** LPCLOSE - CLOSE LINE PRINTER FOR OUTPUT
1134 *
1135 * REMOVE SELECTED LP: DEVICE FROM TABLE OF CURRENTLY ACTIVE DEVICES.
1136 *
1137 * ENTRY NONE
1138 *
1139 * EXIT (PSW) = 'C' CLEAR => NO ERROR
1140 * = 'C' SET => ERROR
1141 * (A) = ERROR CODE
1142 *
1143 * USES ALL
1144 *
1145 *
002.166 1146 LPCLOSE EQU *
1147 *
002.166 315 072 003 1148 CALL UNITASS
002.171 076 036 1149 MVI A,EC.UNA UNIT NOT AVAILABLE
002.173 067 1150 STC
002.174 310 1151 RZ UNIT NOT ASSIGNED
1152 *
002.175 072 034 004 1153 LDA TLP,AS
002.200 346 177 1154 ANI #01111111B CLEAR ASSIGNED BIT
002.202 062 034 004 1155 STA TLP,AS
1156 *
002.205 072 035 004 1157 LPCLOS. LDA TLP,FLG
002.210 346 001 1158 ANI F,FDRM
002.212 310 1159 RZ NO FORM-FEED UPON CLOSE
1160 *
002.213 072 036 004 1161 LDA TLP,FDR
002.216 147 1162 MOV H,A
002.217 056 005 1163 MVI L,UR,LSR
1164 *
002.221 315 012 004 1165 LPC1 CALL IN
002.224 346 040 1166 ANI UC,THE
002.226 312 221 002 1167 JZ LPC1 NOT READY FOR TRANSMIT
1168 *
002.231 056 000 1169 MVI L,UR,THR
002.233 076 014 1170 MVI A,FF
002.235 315 022 004 1171 CALL OUT OUTPUT FORM-FEED
1172 *
002.240 311 1173 RET

```

```

1177 *** LPOUTCH - LINE PRINTER OUTPUT CHARACTER
1178 *
1179 * The special characters processed are:
1180 *
1181 * NULL
1182 * TAB
1183 *
1184 * ENTRY: (A) = BYTE TO BE WRITTEN
1185 * (HL) = UNIT NUMBER OF OUTPUT DEVICE
1186 *
1187 * EXIT: Column Index updated
1188 *
1189 * USES: (PSW)
1190 *
1191 *
002.241 1192 LPOUTCH EQU *
002.241 345 1193 PUSH H
1194 *
1195 *
002.242 376 014 1196 CPI FF
002.244 302 265 002 1197 JNZ LPOT1 IF NOT FORM FEED
002.247 315 234 003 1198 CALL OUTCHAR
002.252 076 001 1199 MVI A,#1
002.254 062 045 004 1200 STA TLP,LX UNIT LINE INDEX = 1
002.257 062 046 004 1201 STA TLP,CX UNIT COLUMN INDEX = 1
002.262 303 070 003 1202 JMP LPOT9
1203 *
1204 *
1205 * CHECK FOR LINE OVER-FLOW
1206 *
002.265 345 1207 LPOT1 PUSH H
002.266 365 1208 PUSH PSW
002.267 072 044 004 1209 LDA TLP,LC
002.272 267 1210 ORA A
002.273 312 312 002 1211 JZ LPOT2 LINES/PAGE = 0
002.276 041 045 004 1212 LXI H,TLP,LX
002.301 276 1213 CMP H
002.302 322 312 002 1214 JNC LPOT2 TLP,LC >= TLP,LX
002.305 076 014 1215 MVI A,FF
002.307 315 241 002 1216 CALL LPOUTCH
002.312 361 1217 POP PSW
002.313 341 1218 POP H
1219 *
002.314 376 011 1220 CPI TAB
002.316 302 347 002 1221 JNZ LPOT5 IF NOT TAB
002.321 076 040 1222 MVI A,' ' IF PRESENTLY AT TAB STOP FORCE
002.323 315 241 002 1223 CALL LPOUTCH TO THE NEXT ONE
002.326 072 046 004 1224 LPOT3 LDA TLP,CX
002.331 075 1225 DCR A
002.332 346 007 1226 ANI 7
002.334 312 070 003 1227 JZ LPOT9 CHECK FOR MULTIPLE OF 8
002.337 076 040 1228 MVI A,' '
002.341 315 241 002 1229 CALL LPOUTCH
002.344 303 326 002 1230 JMP LPOT3
1231 *
002.347 376 015 1232 LPOT5 CPI CR

```

```

002.351 302 367 002 1233 JNZ LPOT6 NOT CARRIAGE RETURN
002.354 315 234 003 1234 CALL OUTCHAR
002.357 076 001 1235 MVI A,1
002.361 062 046 004 1236 STA TLP.CX COLUMN INDEX = 1
002.364 303 070 003 1237 JMP LPOT9
1238
002.367 376 012 1239 LPOT6 CPI NL
002.371 302 020 003 1240 JNZ LPOT7
002.374 076 015 1241 MVI A,CR
002.376 315 241 002 1242 CALL LPOUTCH
003.001 076 212 1243 MVI A,LF+2000 AVOID THE INFINITE RECURSE
003.003 315 241 002 1244 CALL LPOUTCH
003.006 072 045 004 1245 LDA TLP.LX
003.011 07A 1246 INR A UPDATE LINE INDEX
003.012 062 045 004 1247 STA TLP.LX
003.015 303 070 003 1248 JMP LPOT9
1249
003.020 376 040 1250 LPOT7 CPI ' '
003.022 332 065 003 1251 JC LPOT8 (A) < ' ' => NON-PRINT
003.025 376 177 1252 CPI RUBOUT
003.027 322 065 003 1253 JNC LPOT8 (A) >= RUBOUT => NON-PRINT
1254
003.032 365 1255 PUSH PSW
003.033 345 1256 PUSH H
003.034 072 042 004 1257 LDA TLP.WID
003.037 247 1258 ANA A
003.040 312 054 003 1259 JZ LPOT7.5 DON'T DO ANY WRAP
1260
003.043 041 046 004 1261 LXI H,TLP.CX
003.046 276 1262 CMP M
003.047 076 012 1263 MVI A,NL
003.051 33A 241 002 1264 CC LPOUTCH OUTPUT IF WIDTH < INDEX
1265
003.054 072 046 004 1266 LPOT7.5 LDA TLP.CX
003.057 074 1267 INR A
003.060 062 046 004 1268 STA TLP.CX INCREMENT LINE COUNTER
003.063 341 1269 POP H
003.064 361 1270 POP PSW
1271
003.065 315 234 003 1272 LPOT8 CALL OUTCHAR OUTPUT THE CHARACTER
1273
003.070 341 1274 LPOT9 POP H
003.071 311 1275 RET
  
```

```

1278 **      UNITASS - UNIT ASSIGNED
1279 *
1280 *      CHECK LPI DEVICE TABLE TO SEE IF SPECIFIED UNIT IS ASSIGNED.
1281 *
1282 *      ENTRY  (HL) = UNIT NUMBER
1283 *
1284 *      EXIT   (PSW) = 'Z' SET ==> UNIT FREE
1285 *              = 'Z' CLEAR => UNIT ASSIGNED
1286 *
1287 *      USES   (PSW)
1288 *
1289 *
003.072      1290 UNITASS EQU *
1291
003.072 072 034 004 1292      LDA   TLP,AS
003.075 346 200      1293      ANI   10000000B          [Z] = 1 ==> ASSIGNED
1294
003.077 311      1295      RET
  
```

```

1297 **      WAIT - WAIT FOR H14
1298 *
1299 *      WAIT UNTIL DEVICE READY FOR OUTPUT
1300 *
1301 *      ENTRY  NONE
1302 *
1303 *      EXIT   NONE
1304 *
1305 *      USES   (PSW)
1306 *
1307 *
003.100      1308 WAIT   EQU   *
003.100 345      1309      PUSH  H
1310
003.101 072 334 040 1311      WAIT0 LDA  S:CAADR+1
003.104 247      1312      ANA   A
003.105 302 126 003 1313      JNZ   WAIT3          IF CTL-Z,-A,-B,-C HIT
1314
003.110 072 036 004 1315      LDA   TLP.PDR
003.113 147      1316      MOV   H,A
003.114 056 006      1317      MVI   L,UR.MSR
003.116 315 012 004 1318      CALL  IN
003.121 346 020      1319      ANI   UC.CTS
003.123 302 101 003 1320      JNZ   WAIT0          INVERTED SIGNAL!!!
1321
003.126 341      1322      WAIT3 POP  H
003.127 311      1323      RET
  
```

```

1326 **      INITLP - INITIALIZE LP:
1327 *
1328 *      INITIALIZE DEVICE LP: BY:
1329 *
1330 *          SETTING LINES/INCH
1331 *          SETTING FORM LENGTH
1332 *
1333 *
1334 *
1335 *      ENTRY  NONE
1336 *
1337 *      EXIT  NONE
1338 *
1339 *      USES  (PSW),(HL)
1340 *
1341 *
003.130      1342 INITLP EQU  *
1343
1344 *      SET UP LINES/INCH
1345
003.130 072 041 004 1346 LDA TLP,LPI
003.133 376 004      1347 CFI 6
003.135 076 064      1348 MVI A,'4'          6 LINES/INCH
003.137 312 144 003 1349 JZ LPI0
1350
003.142 076 065      1351 MVI A,'5'          8 LINES/INCH
1352
003.144 062 174 003 1353 LPI0 STA INIA+1    SET UP LINES/INCH ESCAPE SEQUENCE
1354
1355 *      SET UP FORM LENGTH
1356
003.147 072 043 004 1357 LDA TLP,LEN
003.152 062 177 003 1358 STA INIB+2
1359
1360 *      OUTPUT THE STRING
1361
003.155 041 173 003 1362 LXI H,INIA
003.160 176      1363 INI1 MOV A,H
003.161 376 377      1364 CFI 377Q
003.163 310      1365 RZ          TO THE END OF THE SEQUENCE
003.164 315 234 003 1366 CALL OUTCHAR
003.167 043      1367 INX H
003.170 303 140 003 1368 JMP INI1
1369
003.173 033 000      1370 INIA DB ESC,0          LINES/INCH (SET UP BY *LPI*)
003.175 033 062 000 1371 INIB DB ESC,'2',0,CR    FORM LENGTH
003.201 377      1372 DB 377Q
  
```

003.202

1375

XTEXT DVDIO

1377X \*\* INCHAR - INPUT CHARACTER  
1378X \*  
1379X \* INPUT CHARACTER FROM SPECIFIED DEVICE  
1380X \*  
1381X \* ENTRY NONE  
1382X \*  
1383X \* EXIT (PSW) = 'Z' CLEAR IF THERE IS A CHARACTER  
1384X \* (A) = CHARACTER  
1385X \* = 'Z' SET IF THERE IS NOT A CHARACTER  
1386X \*  
1387X \* USES (PSW)  
1388X \*  
1389X \*

003.202

1390X

INCHAR EQU \*

003.202 345

1391X

PUSH H

003.203 072 036 004

1392X

LDA D,PORT

003.206 147

1393X

MOV H,A

1394X

1395X \* CHECK FOR DATA

1396X

000.000

1397X

IF H84IO

1398X

003.207 056 005

1399X

MVI L,UR,LSR

003.211 315 012 004

1400X

CALL IN

003.214 346 001

1401X

ANI UC,DR

'Z' SET IF THERE IS DATA

003.216 312 231 003

1402X

JZ INC1

NO DATA

003.221 056 000

1403X

MVI L,UR,RBR

003.223 315 012 004

1404X

CALL IN

003.226 303 232 003

1405X

JMP INC2

1406X

1407X

ELSE

1408X

003.207 056 000

1409X

MVI L,USR

003.211 315 012 004

1410X

CALL IN

003.214 346 001

1411X

ANI USR,RXR

'Z' SET IF THERE IS NO DATA

003.216 312 231 003

1412X

JZ INC1

NO DATA

003.221 056 000

1413X

MVI L,UDR

003.223 315 012 004

1414X

CALL IN

003.226 303 232 003

1415X

ANA A

IGNORE NULL CHARACTERS

1416X

JMP INC2

1417X

1418X

ENDIF

003.231 067

1419X

INC1 STC

1421X

003.232 341

1422X

INC2 POP H

003.233 311

1423X

RET

OUTCHAR

```

1425X **      OUTCHAR - OUTPUT CHARACTER
1426X *
1427X *      OUTPUT CHARACTER TO SPECIFIED DEVICE
1428X *
1429X *      ENTRY (A) = CHARACTER
1430X *
1431X *      EXIT NONE
1432X *
1433X *      USES (PSW)
1434X *
1435X
003.234      1436X OUTCHAR EQU *
003.234 345  1437X PUSH H
1438X
003.235 365  1439X PUSH PSW
003.236 072 036 004 1440X LDA D,PORT
003.241 147  1441X MOV H,A
1442X
000.000      1443X IF HB410
1444X
003.242 056 005  1445X MVI L,UR,LSR
003.244 315 100 003 1446X CALL WAIT WAIT FOR THE HAND-SHAKE /79.11,GC/
003.247 072 334 040 1447X OUTCO LDA S,CAADR+1
003.252 247  1448X ANA A
003.253 302 277 003 1449X JNZ OUTC1 IF CTL-Z,-A,-B,-C HIT
003.254 315 012 004 1450X CALL IN
003.261 346 040  1451X ANI UC,THE
003.263 312 247 003 1452X JZ OUTC0 IF NOT READY FOR TRANSMIT
003.266 361  1453X POP PSW
003.267 056 000  1454X MVI L,UR,THR
003.271 315 022 004 1455X CALL OUT
003.274 303 300 003 1456X JMP OUTC2
1457X
1458X ELSE
1459X
1460X MVI L,USR
1461X CALL WAIT WAIT FOR THE HAND-SHAKE /79.11,GC/
1462X OUTCO LDA S,CAADR+1
1463X ANA A
1464X JNZ OUTC1 IF CTL-Z,-A,-B,-C HIT
1465X CALL IN
1466X ANI USR,THR
1467X JZ OUTC0 IF NOT READY FOR TRANSMIT
1468X POP PSW
1469X MVI L,UDR
1470X CALL OUT
1471X JMP OUTC2
1472X
1473X ENDIF
1474X
003.277 361  1475X OUTC1 POP PSW
1476X
003.300 341  1477X OUTC2 POP H
003.301 311  1478X RET
000.000      1479X IF HB410
  
```

```

1481X **      18250 - INITIALIZE 8250
1482X *
1483X *      INITIALIZE AN 8250 PORT.  STOLEN AS CAP FROM CONSL. DRIVER.
1484X *
1485X *      ENTRY      (A)          = PORT ADDRESS
1486X *      (HL)[0-14] = NEW BAUD RATE
1487X *      (HL)[15]  = 1 IF TWO STOP BITS
1488X *
1489X *      EXIT      NONE
1490X *
1491X *      USES      (A)
1492X *
1493X *
003.302      1494X 18250 EQU *
003.302 325   1495X      PUSH  D
1496X
003.303 353   1497X      XCHG
003.304 147   1498X      MOV   H,A
003.305 056 001 1499X      MVI  L,UR:IER      /79.02.GC/
003.307 257   1500X      XRA   A      /79.02.GC/
003.310 315 022 004 1501X      CALL OUT      /79.02.GC/
003.313 056 004   1502X      MVI  L,UR:MCR      /79.01.GC/
003.315 076 020   1503X      MVI  A,UC:L00      /79.01.GC/
003.317 315 022 004 1504X      CALL OUT      SET LOOP-BACK      /79.01.GC/
003.322 056 003   1505X      MVI  L,UR:LCR
003.324 076 200   1506X      MVI  A,UC:DLA
003.326 315 022 004 1507X      CALL OUT
003.331 056 000   1508X      MVI  L,UR:DLL
003.333 173   1509X      MOV  A,E
003.334 315 022 004 1510X      CALL OUT
003.337 056 001   1511X      MVI  L,UR:DLH
003.341 172   1512X      MOV  A,D
003.342 346 177   1513X      ANI  1770
003.344 315 022 004 1514X      CALL OUT
003.347 056 003   1515X      MVI  L,UR:LCR
003.351 172   1516X      MOV  A,D
003.352 007   1517X      RLC
003.353 007   1518X      RLC
003.354 007   1519X      RLC
000.000      1520X      ERRNZ UC:2SB-4
003.355 346 004   1521X      ANI  UC:2SB
003.357 366 003   1522X      ORI  UC:8BW      8 BIT WORDS
003.361 315 022 004 1523X      CALL OUT
003.364 056 000   1524X      MVI  L,UR:RBR
003.366 315 012 004 1525X      CALL IN      REMOVE GARBAGE
003.371 076 156   1526X      MVI  A,AC:DLY      /79.01.GC/
003.373 315 053 000 1527X      CALL :DLY      /79.01.GC/
003.376 056 004   1528X      MVI  L,UR:MCR      /79.01.GC/
004.000 315 012 004 1529X      CALL IN      /79.01.GC/
004.003 346 357   1530X      ANI  3770-UC:L00      /79.01.GC/
004.005 315 022 004 1531X      CALL OUT      TURN OFF LOOP-BACK      /79.01.GC/
1532X
004.010 321      1533X      POP  D
004.011 311      1534X      RET
1535X      ELSE
1536X 18251      SPACE  4,10

```

```
1537X **      I8251 - INITIALIZE 8251
1538X *
1539X *      INITIALIZE AN 8251 PORT
1540X *
1541X *      ENTRY (A)      = PORT ADDRESS
1542X *      (HL)[15] = 1 IF TWO STOP BITS
1543X *
1544X *      EXIT  NONE
1545X *
1546X *      USES  ALL
1547X *
1548X
1549X I8251 EQU *
1550X XCHG
1551X MOV  H,A
1552X MVI  L,USR
1553X MOV  A,D
1554X ANI  2000
1555X ERRNZ 2000+UMI,1B-UMI,2B      (A) = 2000 IF TWO STOP BITS
1556X ORI  UMI,1B+UMI,1B+UMI,16X
1557X STA  I8251,B
1558X LXI  B,I8251,A
1559X I8251.1 LDAX B
1560X CPI  #3770
1561X JZ   I8251.2
1562X CALL OUT
1563X INX  B
1564X JMP  I8251.1
1565X I8251.2 MVI  A,UCI,ER+UCI,TE+UCI,RE
1566X CALL OUT
1567X MVI  L,UDR
1568X CALL IN
1569X RET
1570X I8251,A DB  0,0,0,0,0,0
1571X DB  UCI,IR
1572X I8251,B DB  0
1573X DB  3770      CONFIGURATION BYTE
1574X ENDDIF
```

```
1576X **      IN - INPUT
1577X *
1578X *      INPUT BYTE FROM SPECIFIED PORT
1579X *
1580X *      ENTRY (H)      = PORT ADDRESS
1581X *      (L)      = OFFSET
1582X *
1583X *      EXIT (A)      = BYTE READ
1584X *
1585X *      USES (PSW)
1586X *
1587X
004.012      1588X IN EQU *
004.012 17A 1589X MOV  A,H
```

```

004.013 205 1590X ADD L
004.014 062 020 004 1591X STA IN,ADD
004.017 333 000 1592X IN *-*
004.020 1593X IN,ADD EQU *-1
004.021 311 1594X RET
  
```

```

1596X ** OUT - OUTPUT
1597X *
1598X * OUTPUT BYTE TO SPECIFIED PORT
1599X *
1600X * ENTRY (A) = BYTE TO BE WRITTEN
1601X * (H) = PORT ADDRESS
1602X * (L) = OFFSET
1603X *
1604X * EXIT NONE
1605X *
1606X * USES NONE
1607X *
1608X *
  
```

```

004.022 1609X OUT EQU *
004.022 365 1610X PUSH PSW
004.023 174 1611X MOV A,H
004.024 205 1612X ADD L
004.025 062 032 004 1613X STA OUT,ADD
004.030 361 1614X POP PSW
004.031 323 000 1615X OUT *-*
004.032 1616X OUT,ADD EQU *-1
004.033 311 1617X RET
004.034 1618 XTEXT TBRA
  
```

```

1620X ** $TBRA - BRANCH RELATIVE THROUGH TABLE.
1621X *
1622X * $TBRA USES THE SUPPLIED INDEX TO SELECT A BYTE FROM THE
1623X * JUMP TABLE. THE CONTENTS OF THIS BYTE ARE ADDED TO THE
1624X * ADDRESS OF THE BYTE, YIELDING THE PROCESSOR ADDRESS.
1625X *
1626X * CALL $TBRA
1627X * DB LAB1-* INDEX = 0 FOR LAB1
1628X * DB LAB2-* INDEX = 1 FOR LAB2
1629X * DB LABN-* INDEX = N-1 FOR LABN
1630X *
1631X * ENTRY (A) = INDEX
1632X * (RET) = TABLE FWA
1633X * EXIT TO COMPUTED ADDRESS
1634X * USES F,H,L
1635X *
1636X *
  
```

```

031.076 1637X $TBRA EQU 31076A IN H17 ROM
004.034 1638 XTEXT TYP1X
  
```

1640X \*\* \$TYPTX - TYPE TEXT.  
1641X \*  
1642X \* \$TYPTX IS CALLED TO TYPE A BLOCK OF TEXT ON THE SYSTEM CONSOLE.  
1643X \*  
1644X \* IMBEDDED ZERO BYTES INDICATE A CARRIAGE RETURN LINE FEED.  
1645X \* A BYTE WITH THE 2000 BIT SET IS THE LAST BYTE IN THE MESSAGE.  
1646X \*  
1647X \* ENTRY (RET) = TEXT  
1648X \* EXIT TO (RET+LENGTH)  
1649X \* USES A,F  
1650X  
1651X  
031.136 1652X \$TYPTX EQU 31136A IN H17 ROM  
1653X  
031.144 1654X \$TYPTX EQU 31144A IN H17 ROM

1657 \*\*\* TLP.UNT - TABLE OF LP: UNIT CONSTANTS

		1658	*			
		1659	*			
		1660	*			
004.034		1661	TLP.UNA	EGU	*	
		1662				
004.034	000	1663	TLP.UNT	DB	0	UNIT NUMBER
		1664				
004.034		1665	TLP.AS	EQU	TLP.UNT	[7] = 1 IF ASSIGNED
		1666				
004.035	001	1667	TLP.FLG	DB	DFLT.FG	GENERAL FLAG BYTE
		1668				
004.036	340	1669	TLP.PDR	DB	DFLT.LF	PORT
004.036		1670	D.PORT	EQU	TLP.PDR	
		1671				
004.037	030 000	1672	TLP.BAU	DW	DFLT.BD	[15] = 1 IF TWO STOP BITS
		1673				
004.041	006	1674	TLP.LPI	DB	DFLT.LI	LINES/INCH
		1675				
004.042	204	1676	TLP.WID	DB	DFLT.WD	CHARACTERS/LINE
		1677				
004.043	102	1678	TLP.LEN	DB	DFLT.FL	FORM LENGTH
		1679				
004.044	074	1680	TLP.LC	DB	DFLT.LC	LINE COUNT = LINES/PAGE
		1681				
004.045	001	1682	TLP.LX	DB	DFLT.LX	LINE INDEX = LINE HEAD IS OVER
		1683				
004.046	001	1684	TLP.CX	DB	DFLT.CX	COLUMN INDEX = COLUMN HEAD IS OVER

004.047	103 107	1686	DW	'GC'		DUMMY ADDRESS FOR RELOCATION
004.051		1687	DS	64		PATCH AREA
		1688	LON	6		
		1689				
004.151	055 000 062	1690	END			

- 000 065 000
- 115 000 124
- 000 127 000
- 144 000 151
- 000 157 000
- 164 000 171
- 000 174 000
- 200 001 212
- 001 226 001
- 243 001 255
- 001 267 001
- 302 001 344
- 001 350 001
- 352 001 003
- 002 033 002
- 044 002 055
- 002 062 002
- 045 002 070
- 002 073 002

076 002 101  
002 111 002  
114 002 121  
002 125 002  
143 002 147  
002 154 002  
161 002 167  
002 174 002  
203 002 206  
002 214 002  
222 002 227  
002 236 002  
245 002 250  
002 255 002  
260 002 263  
002 270 002  
274 002 277  
002 303 002  
310 002 317  
002 324 002  
327 002 335  
002 342 002  
345 002 352  
002 355 002  
362 002 365  
002 372 002  
377 002 004  
003 007 003  
013 003 016  
003 023 003  
030 003 035  
003 041 003  
044 003 052  
003 055 003  
061 003 066  
003 073 003  
106 003 111  
003 117 003  
124 003 131  
003 140 003  
145 003 150  
003 153 003  
156 003 165  
003 171 003  
204 003 212  
003 217 003  
224 003 227  
003 237 003  
245 003 254  
003 257 003  
264 003 272  
003 275 003  
311 003 320  
003 327 003  
335 003 345  
003 362 003

HD08 LPT DEVICE DRIVER; W-24 (TI 810)  
COMMON DECKS INVOKED

HEATH HEASH V1.4 01/20/78  
18:31:50 16-MAY-80

PAGE 39

367 003 001  
004 006 004  
015 004 026  
004 000 000

ASSEMBLY COMPLETE  
1690 STATEMENTS  
0 ERRORS DETECTED  
11506 BYTES FREE

CROSS-REFERENCE TABLE

*CNA	042207	684L	812	832
*DCS	042204	682L		
*FST	042212	686L		
*LBD	042223	692L	815	
*PBF	042231	694L	785	
*PBV	042234	698L	794	
*SNA	042201	680L	765	
*SOP	042226	694L	763	
*TBLS	042215	688L		
*TBRA	031076	972	1637E	
*TYPTX	031136	871	1652E	
*TYPTX	031144	1654E		
*NTBLS	042220	890L		
.	001354	947S	948	949
.ABUSS	040024	210E		
.ALARM	002136	183E		
.ALEDS	040013	208E		
.CHFLG	000060	70L		
.CLEAR	000053	67L		
.CLEARA	000056	68L		
.CLOSE	000046	60L		
.CLRCO	000007	44L		
.CONSL	000006	43L		
.CRC	002347	191E		
.CRCSUM	040027	211E		
.CTC	002172	185E		
.CTL	000041	55L		
.CTLFLG	040011	207E		
.DECODE	000053	65L		
.DELET	000050	62L		
.DISMT	000061	71L		
.DLEDS	040021	209E		
.PLY	000053	180E	1527	
.DMNMS	000203	82L		
.DMOUN	000201	80L		
.DOD	003122	194E		
.DODA	003356	196E		
.DSPMOD	040007	205E		
.DSPQDT	040006	204E		
.DUMP	001374	182E		
.ERROR	000057	69L		
.EXIT	000000	37L		
.HORN	002140	184E		
.IDENT	000000	179E		
.IDWRK	040002	202E		
.LINK	000040	54L		
.LOAD	001267	181E		
.LOADI	000062	72L		
.LOADQ	000010	45L		
.MFLAG	040010	206E		
.MONMS	000202	81L		
.MOUNT	000200	79L		
.NAME	000054	66L		
.OPENC	000045	59L		
.OPENR	000042	56L		
.OPENU	000044	58L		
.OPENW	000043	57L		
.PCHL	002264	187E		

## CROSS REFERENCE TABLE

.POSIT	000047	61L		
.PRINT	000003	40L		
.RCK	003260	195E		
.READ	000004	41L		
.REGI	040005	203E		
.REGPTR	040035	214E		
.RENAM	000051	63L		
.RESET	000204	83L		
.RNB	002331	190E		
.RNP	002325	109E		
.SCIN	000001	38L		
.SCOUT	000002	39L		
.SETTP	000052	64L		
.SRS	002245	188E		
.START	040000	201E		
.SYSRES	000012	47L		
.TICCNT	040033	213E		
.TPERR	002205	106E		
.TPERRX	040031	212E		
.UIVEC	040037	215E		
.VERS	000011	46L		
.WNB	003024	193E		
.WNP	003017	192E		
.WRITE	000005	42L		
AC.DLY	000156	566E	1526	
AIO.CGN	041047	365L		
AIO.CHA	041116	380L		
AIO.CNT	041111	376L		
AIO.CSI	041050	366L		
AIO.DBA	041041	361E		
AIO.DES	041055	370L		
AIO.DEV	041057	371L		
AIO.DIR	041062	374L		
AIO.DTA	041053	369L		
AIO.EOF	041113	378L		
AIO.EOM	041112	377L		
AIO.FLG	041043	362L		
AIO.GRT	041044	363L		
AIO.LGN	041051	367L		
AIO.LSI	041052	368L		
AIO.SPG	041046	364L		
AIO.TFF	041114	379L		
AIO.UNI	041061	372L		
AIO.VEC	041040	360L		
BAU1	000132	813	816	820L
BAUD	000107	811L	939	
BAUDI	000002	916	938E	
BELL	000007	92E		
BKSP	000010	94E		
BOOT.P	000001	340E		
C.STX	000002	96E		
C.SYN	000026	95E		
CB.CLI	000100	149E	164	
CB.HTL	000040	148E		
CB.SPK	000200	150E		
CB.SSI	000020	147E		
CDB.H84	000001	283E		
CDB.H85	000000	282E		

CROSS REFERENCE TABLE

CO.FLG	000001	432E				
CR	000015	88E	1082	1232	1241	1371
CS.FLG	000200	433E				
CSL.CHR	000001	410E				
CSL.ECH	000200	408E				
CSL.WRP	000002	409E				
CTLA	000001	103E				
CTLB	000002	104E				
CTLC	000003	105E				
CTLD	000004	106E				
CTLO	000017	107E				
CTLP	000020	108E				
CTLQ	000021	109E				
CTLS	000023	110E				
CTLZ	000032	111E				
CTP.2SB	000010	418E				
CTP.BKM	000002	419E				
CTP.BKS	000200	415E				
CTP.MLI	000040	416E				
CTP.MLO	000020	417E				
CTP.TAB	000001	420E				
D.CON	040110	230L				
D.PORT	004036	1392	1440	1670E		
D.RAM	040240	233L				
D.VEC	040130	232L				
DC.ABT	000007	126L				
DC.CLD	000006	125L				
DC.LOD	000011	128L				
DC.MAX	000012	129L	969			
DC.MOU	000010	127L				
DC.OPR	000003	122L				
DC.OPU	000005	124L				
DC.OPW	000004	123L				
DC.REA	000000	119L				
DC.RER	000002	121L				
DC.WRI	000001	120L				
DEV.DDA	000004	517L				
DEV.DVG	000016	529L				
DEV.DVL	000014	528L				
DEV.FLG	000006	518L				
DEV.JMP	000003	516L				
DEV.MNU	000011	525L				
DEV.MUM	000010	524L				
DEV.NAH	000000	508L				
DEV.RES	000002	512L				
DEV.SPG	000007	523L				
DEV.UNT	000012	526L				
DEVELEN	000017	531E				
DF.CLR	000376	251E				
DF.EMP	000377	250E				
DFLT.RD	000030	729E	1672			
DFLT.CX	000001	738E	1684			
DFLT.FG	000001	731E	1667			
DFLT.FL	000102	734E	1678			
DFLT.LC	000074	735E	1680			
DFLT.LI	000006	732E	1674			
DFLT.LP	000340	728E	1669			
DFLT.LX	000001	737E	1682			

DFLT.WD	000204	733E	1676	
DIR.ALD	000025	266L		
DIR.CLU	000015	259L		
DIR.CRD	000023	265L		
DIR.EXT	000010	254L		
DIR.FGN	000020	262L		
DIR.FLB	000016	260L		
DIR.LGN	000021	263L		
DIR.LSI	000022	264L		
DIR.NAM	000000	253L		
DIR.PRO	000013	255L		
DIR.VER	000014	256L		
DIRELEN	000027	268E	374	
DIRIDL	000015	257E		
DM.MR	000000	154E		
DM.MW	000001	155E		
DM.RR	000002	156E		
DM.RW	000003	157E		
DR.IM	000001	513E		
DR.FR	000002	514E		
DT.CR	000002	520E		
DT.CW	000004	521E	706	709
DT.BD	000001	519E		
DV.EL	000000	509E		
DV.NU	000001	510E		
DVD.CAP	000007	552L		
DVD.DVD	000006	551L		
DVD.ENT	002000	560E	949	968
DVD.MNU	000011	554L		
DVD.MUM	000010	553L		
DVD.SET	000022	556L		
DVD.STE	000053	558E	714	756
DVD.UFL	000012	555L		
DVD.FLU	000307	547E	705	711
EC.CNA	000004	450L		
EC.DDA	000027	469L	1017	
EC.DIF	000017	461L		
EC.DIW	000035	475L		
EC.DNI	000045	483L		
EC.DNR	000046	484L		
EC.DNS	000005	451L	1001	
EC.DSC	000047	485L		
EC.EDF	000001	447L		
EC.EOM	000002	448L		
EC.FAO	000031	471L		
EC.FAP	000026	468L		
EC.FL	000030	470L		
EC.FNF	000014	458L		
EC.FNO	000011	455L		
EC.FNR	000034	474L		
EC.FOD	000043	481L		
EC.FUC	000013	457L		
EC.ICN	000016	460L		
EC.IDN	000006	452L		
EC.IFC	000020	462L		
EC.IFN	000007	453L		
EC.ILC	000003	449L		
EC.ILO	000040	478L	767	

EC.ILR	000012	456L	984					
EC.ILV	000037	477L	820	857				
EC.IOI	000052	488L						
EC.IS	000032	472L						
EC.NCV	000050	486L						
EC.NEM	000021	463L						
EC.NDS	000051	487L						
EC.NFM	000044	482L						
EC.NRD	000010	454L						
EC.NVM	000042	480L						
EC.OTL	000053	489L						
EC.RF	000022	464L						
EC.UNA	000036	476L	1055	1108	1149			
EC.UND	000015	459L						
EC.UUN	000033	473L	771					
EC.VPM	000041	479L						
EC.WF	000023	465L						
EC.WP	000025	467L						
EC.WPV	000024	466L						
ENL	000212	101E	882					
ESC	000033	99E	1370	1371				
F.FORM	000001	724E	731	896	896	900	1158	
FF	000014	102E	1170	1196	1215			
FLAG	042231	785E	933					
FLAGI	000000	896	900	932E				
HB4IO	000000	1E	1397	1443	1479			
HELP	000204	871L	945					
HELPI	000004	922	944E					
I.CONFL	000004	435E	436					
I.CONTY	000001	422E	423					
I.COMMT	000003	428E	429					
I.CSLMD	000000	412E						
I.CUSDR	000002	425E	426					
IB250	003302	1071	1494E					
IN	004012	1165	1318	1400	1404	1450	1525	1529
IN.ADD	004020	1591	1593E					1588E
INCL	003231	1402	1420L					
INC2	003232	1405	1422L					
INCHAR	003202	1390E						
INI1	003160	1363L	1368					
INIA	003173	1353	1362	1370L				
INIB	003175	1358	1371L					
INITLF	003130	1081	1342E					
IP.PAD	000360	140E						
LF	000012	89E	1243					
LPABORT	002032	980	981	1015E				
LPC1	002221	1165L	1167					
LPCL05	002205	1127	1157L					
LPCL0SE	002166	979	1016	1146E				
LPD0D	002000	967E						
LPD0D1	002022	970	984L					
LPI	000136	829E	942					
LPI0	003144	1349	1353L					
LPI1	000200	833	837	841	844	847	857L	
LPII	000003	919	941E					
LPLOADD	002041	982	1033E					
LPNSUIT	002026	973	975	976	978	1000E		
LPOPENW	002043	977	1051E					



CROSS REFERENCE TABLE

S.DDDTA	040366	302L							
S.DDGRP	040364	299L							
S.DDLDA	040360	297L							
S.DDLEN	040362	298L							
S.DDOPC	040370	303L							
S.DFWA	040354	292L							
S.DIREA	041016	331L							
S.DLINK	040346	289L							
S.FASER	041013	330L							
S.FCI	041021	332L							
S.GRTO	024000	221E							
S.GRT1	025000	222E							
S.GRT2	026000	223E							
S.GUP	041027	334L							
S.HIMEM	040316	397L							
S.INT	040343	235L	277						
S.JUMPS	041010	328L							
S.MOUNT	041032	336L							
S.OFWA	040350	290L							
S.OMAX	040324	403L							
S.OSN	041004	319L							
S.OVLE	041000	316L							
S.OVLFL	040371	312L							
S.OVLS	040376	315L							
S.OVSTK	041035	344L							
S.RFWA	040356	293L							
S.SCI	041024	333L							
S.SCR	041120	382L							
S.SRD	041010	329L							
S.SQVR	041146	237L	239						
S.SSN	041002	318L							
S.SYSH	040320	399L							
S.TIME	040312	396L							
S.UCSF	040372	313L							
S.UCSL	040374	314L							
S.USRM	040322	401L							
S.VAL	040277	234L	392						
SC.ACE	000350	565E							
SC.WART	000372	634E							
SET1	000103	758	771L						
SETNTR	000053	755E							
STACK	042200	241E							
STACKL	001032	239E							
SYDD	040130	231E							
SYSALL	000377	30E							
TAB	000011	98E	1220						
TLP.AS	004034	1061	1153	1292	1465E				
TLP.BAU	004037	817	1070	1672L					
TLP.CX	004046	1064	1201	1224	1236	1261	1266	1268	1484L
TLP.FLG	004035	897	901	1157	1667L				
TLP.LC	004044	908	1209	1680L					
TLP.LEN	004043	905	1357	1678L					
TLP.LPI	004041	851	1346	1674L					
TLP.LX	004045	1063	1200	1212	1245	1247	1682L		
TLP.PDR	004036	911	1069	1073	1161	1315	1669L	1670	
TLP.UNA	004034	1661E							
TLP.UNT	004034	1663L	1665						
TLP.WID	004042	914	1257	1676L					

CROSS REFERENCE TABLE

UC.2SB	000004	591E	1520	1521
UC.5BW	000000	587E		
UC.6BW	000001	588E		
UC.7BW	000002	589E		
UC.8BW	000003	590E	1522	
UC.BI	000020	610E		
UC.CTS	000020	619E	1319	
UC.DCS	000001	615E		
UC.DDR	000002	616E		
UC.DLA	000200	596E	1506	
UC.DR	000001	606E	1401	
UC.DRL	000010	618E		
UC.DSR	000040	620E		
UC.DTR	000001	599E	1076	
UC.EDA	000001	577E		
UC.EPS	000020	593E		
UC.FE	000010	609E		
UC.IID	000006	584E		
UC.IIP	000001	583E		
UC.L00	000020	603E	1503	1530
UC.MSI	000010	580E		
UC.DR	000002	607E		
UC.DU1	000004	601E		
UC.DU2	000010	602E	1076	
UC.PE	000004	608E		
UC.PEN	000010	592E		
UC.RI	000100	621E		
UC.RLS	000200	622E		
UC.RSI	000004	579E		
UC.RTS	000002	600E	1076	
UC.SB	000100	595E		
UC.SKF	000040	594E		
UC.TER	000004	617E		
UC.THE	000040	611E	1166	1451
UC.TRE	000002	578E		
UC.YSE	000100	612E		
UCI.ER	000020	656E		
UCI.IE	000002	658E		
UCI.IR	000100	654E		
UCI.RE	000004	657E		
UCI.RO	000040	655E		
UCI.TE	000001	659E		
UDR	000000	631E		
UMI.16X	000002	649E		
UMI.1B	000100	639E		
UMI.1X	000001	648E		
UMI.2B	000300	641E		
UMI.24X	000003	650E		
UMI.HB	000200	640E		
UMI.L5	000000	644E		
UMI.L6	000004	645E		
UMI.L7	000010	646E		
UMI.L8	000014	647E		
UMI.PA	000020	643E		
UMI.PE	000040	642E		
UNITASS	003072	1053	1106	1148 1290E
UNT.DIS	000005	540L		
UNT.FLG	000000	537L		

CROSS REFERENCE TABLE

UNT.GRT	000001	538L				
UNT.GTS	000003	539L				
UNT.SIZ	000007	542E				
UD.CLK	000001	166E				
UD.DDU	000002	165E				
UD.HLT	000200	163E				
UD.NFR	000100	164E				
UR.DLL	000000	572E	1508			
UR.DLM	000001	574E	1511			
UR.IER	000001	576E	1499			
UR.IIR	000002	582E				
UR.LCR	000003	586E	1505	1515		
UR.LSR	000005	605E	1163	1399	1445	
UR.MCR	000004	598E	1075	1502	1528	
UR.MSR	000006	614E	1317			
UR.RBR	000000	568E	1403	1524		
UR.TMR	000000	570E	1169	1454		
USERFWA	042200	242E	678			
USR	000001	632E				
USR.FE	000040	663E				
USR.DE	000020	664E				
USR.FE	000010	665E				
USR.RXR	000002	667E				
USR.TXE	000004	666E				
USR.TXR	000001	668E				
VAL	042234	794E	936			
VALI	000001	904	907	910	913	935E
VERS	000026	28E				
WAIT	003100	1308E	1444			
WAIT0	003101	1311L	1320			
WAIT3	003126	1313	1322L			

25484 BYTES FREE