

18:33:09 16-MAY-80

000.000

```

1 H8410 EQU 0 ASSEMBLE FOR 8250 INTERFACE
3 *** DBDVD - DIABLO DEVICE DRIVER
4 *
5 * G. Chandler /79.07.17/
6 *
7 * COPYRIGHT JULY 17, 1979 FOR:
8 *
9 * HEATH CO.
10 * BENTON HARBOR, MI
11 * 49022
12 *
13 *
14 * Copyright November 1979 /79.11.sc/
15 *

```

```

17 ** DBDVD IS THE DEVICE DRIVER FOR DEVICE
18 *
19 * DB:
20 *
21 * DB: IS A DIABLO PRINTER INTERFACED VIA AN H88-3, H-8-4
22 *

```

000.000

24 XTEXT FILDEF

26X ** FILDEF - FILE TYPE DEFINITIONS.

```

27X *
28X * DB 377Q,FT,XXX
29X
30X

```

000.000

```

31X FT.ABS EQU 0 ABSOLUTE BINARY
000.001 32X FT.PIC EQU 1 POSITION INDEPENDANT CODE
000.002 33X FT.REL EQU 2 RELOCATABLE CODE
000.003 34X FT.BAC EQU 3 COMPILED BASIC CODE
000.000 35 XTEXT PICDEF

```

37X ** PIC FORMAT EQUIVALENCES.

000.000

38X
39X ORG 0

000.000

```

40X
41X PIC.ID DS 1 377Q = BINARY FILE FLAG
000.001 42X DS 1 FILE TYPE (FT,PIC)
000.002 43X PIC.LEN DS 2 LENGTH OF ENTIRE RECORD
000.004 44X PIC.PTR DS 2 INDEX OF START OF PIC TABLE
45X
000.006 46X PIC.COD DS 0 CODE STARTS HERE

```

PICDEF

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000.006 47 XTEXT DIRDEF

49X ** DIRECTORY ENTRY FORMAT.

50X

000.000 51X ORG 0

52X

53X

000.377 54X DF.EMP EQU 3770 FLAGS ENTRY EMPTY

000.376 55X DF.CLR EQU 3760 FLAGS ENTRY EMPTY, REST OF DIR ALSO CLEAR

56X

000.000 57X DIR.NAM DS 8 NAME

000.010 58X DIR.EXT DS 3 EXTENSION

000.013 59X DIR.PRO DS 1 PROJECT

000.014 60X DIR.VER DS 1 VERSION

000.015 61X DIRIDL EQU * FILE IDENTIFICATION LENGTH

62X

000.015 63X DIR.CLU DS 1 CLUSTER FACTOR

000.016 64X DIR.FLG DS 1 FLAGS

000.017 65X DS 1 RESERVED

000.020 66X DIR.FGN DS 1 FIRST GROUP NUMBER

000.021 67X DIR.LGN DS 1 LAST GROUP NUMBER

000.022 68X DIR.LSI DS 1 LAST SECTOR INDEX (IN LAST GROUP)

000.023 69X DIR.CRD DS 2 CREATION DATE

000.025 70X DIR.ALD DS 2 LAST ALTERATION DATE

71X

000.027 72X DIRELEN EQU * DIRECTORY ENTRY LENGTH

000.027 73 XTEXT HOSEQU

75X ** HDOS SYSTEM EQUIVALENCES.

76X *

77X

024.000 78X S.GRT0 EQU 24000A SYSTEM AREA FOR GRT0

025.000 79X S.GRT1 EQU 25000A SYSTEM AREA FOR GRT1

026.000 80X S.GRT2 EQU 26000A SYSTEM AREA FOR GRT2

81X

030.000 82X ROMBOOT EQU 30000A ROM BOOT ENTRY

83X

040.100 84X ORG 40100A FREE SPACE FROM PAM-8

85X

040.100 86X DS 8 JUMP TO SYSTEM EXIT

040.110 87X D.CON DS 16 DISK CONSTANTS

040.130 88X SYDD EQU * SYSTEM DISK ENTRY POINT

040.130 89X D.VEC DS 24*3 SYSTEM ROM ENTRY VECTORS

040.240 90X D.RAM DS 31 SYSTEM ROM WORK AREA

040.272 91X S.VAL DS 36 SYSTEM VALUES

040.343 92X S.INT DS 115 SYSTEM INTERNAL WORK AREAS

041.124 93X DS 16

041.146 94X S.SOVR DS 2 STACK OVERFLOW WARNING

041.150 95X DS 42200A-* SYSTEM STACK

001.032 96X STACKL EQU *-S.SOVR STACK SIZE

97X

042.200	98X STACK EQU *	LWA+1 SYSTEM STACK
042.200	99X USERFWA EQU *	USER FWA
042.200	100 XTEXT ESINT	
	102X **	S.INT - SYSTEM INTERNAL WORKAREA DEFINITIONS.
	103X *	
	104X *	THESE CELLS ARE REFERENCED BY OVERLAYS AND MAIN CODE, AND
	105X *	MUST THEREFORE RESIDE IN FIXED LOW MEMORY.
	106X	
	107X	
040.343	108X	ORG S.INT
	109X	
	110X **	CONSOLE STATUS FLAGS
	111X	
040.343	112X S.CDB DS 1	CONSOLE DESCRIPTOR BYTE
000.000	113X CDB.H85 EQU 00000000B	
000.001	114X CDB.H84 EQU 00000001B	=0 IF H8-5, =1 IF H8-4
040.344	115X S.BAUD DS 2	[0-14] H8-4 BAUD RATE, =0 IF H8-5
	116X *	[15] =1 IF BAUD RATE => 2 STOP BITS
	117X	
	118X **	TABLE ADDRESS WORDS
	119X	
040.346	120X S.DLINK DS 2	ADDRESS OF DATA IN HDOS CODE
040.350	121X S.DFWA DS 2	FWA OVERLAY TABLE
040.352	122X S.CFWA DS 2	FWA CHANNEL TABLE
040.354	123X S.DFWA DS 2	FWA DEVICE TABLE
040.356	124X S.RFWA DS 2	FWA RESIDENT HDOS CODE
	125X	
	126X **	DEVICE DRIVER DELAYED LOAD FLAGS
	127X	
040.360	128X S.DDLDA DS 2	DRIVER LOAD ADDRESS (HIGH BYTE=0 IF NO LOAD PENDING)
040.362	129X S.DDLEN DS 2	CODE LENGTH IN BYTES
040.364	130X S.DDGRP DS 1	GROUP NUMBER FOR DRIVER
040.365	131X DS 1	HOLD PLACE
	132X *S.DDSEC DS 2	SECTOR NUMBER FOR DRIVER (* OBSOLETE ! *)
040.366	133X S.DDDTA DS 2	DEVICE'S ADDRESS IN DEVLST +DEV.RES
040.370	134X S.DDOPC DS 1	OPEN OPCODE PENDING
	135X	
	136X **	OVERLAY MANAGEMENT FLAGS
	137X	
000.001	138X OVL.IN EQU 00000001B	IN MEMORY
000.002	139X OVL.RES EQU 00000010B	PERMANENTLY RESIDENT
000.014	140X OVL.NUM EQU 00001100B	OVERLAY NUMBER MASK
000.200	141X OVL.UCS EQU 10000000B	USER CODE SWAPPED FOR OVERLAY
	142X	
040.371	143X S.OVLFL DS 1	OVERLAY FLAG
040.372	144X S.UCSF DS 2	FWA SWAPPED USER CODE
040.374	145X S.UCSL DS 2	LENGTH SWAPPED USER CODE
040.376	146X S.OVLS DS 2	SIZE OF OVERLAY CODE
041.000	147X S.OVLE DS 2	ENTRY POINT OF OVERLAY CODE
	148X	
041.002	149X S.SSN DS 2	SWAP AREA SECTOR NUMBER
041.004	150X S.OSN DS 2	OVERLAY SECTOR NUMBER

ESINT

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151X
152X *      SYSCALL PROCESSING WORK AREAS
153X
041.006 154X S.CACC DS      1      (ACC) UPON SYSCALL
041.007 155X S.CODE DS      1      SYSCALL INDEX IN PROGRESS
156X
157X *      JUMPS TO ROUTINES IN RESIDENT HDOS CODE
158X
041.010 159X S.JUMPS DS      0      START OF DUMP VECTORS
041.010 160X S.SDD DS      3      JUMP TO STAND-IN DEVICE DRIVER
041.013 161X S.FASER DS      3      JUMP TO FATSERR (FATAL SYSTEM ERROR)
041.016 162X S.DIREA DS      3      JUMP TO DIREAD (DISK FILE READ)
041.021 163X S.FCI DS      3      JUMP TO FCI (FETCH CHANNEL INFO)
041.024 164X S.SCI DS      3      JUMP TO SCI (STORE CHANNEL INFO)
041.027 165X S.GUP DS      3      JUMP TO GUP (GET UNIT POINTER)
166X
041.032 167X S.MOUNT DS      1      <0 IF THE SYSTEM DISK IS MOUNTED
041.033 168X S.DCS DS      1      DEFAULT CLUSTER SIZE-1
169X
041.034 170X S.BOOTF DS      1      BOOT FLAGS
000.001 171X BOOT.P EQU      00000001B EXECUTE PROLOGUE UPON BOOTUP
172X
173X *      STACK VALUE SAVED FOR OVERLAY SYSCALLS
174X
041.035 175X S.OVSTK DS      2      VALUE OF SP UPON SYSCALLS USING OVERLAY
176X
041.037 177X          DS      1      RESERVED

179X **      ACTIVE I/O AREA.
180X *
181X *      THE AIO.XXX AREA CONTAINS INFORMATION ABOUT THE I/O OPERATION
182X *      CURRENTLY BEING PERFORMED. THE INFORMATION IS OBTAINED FROM
183X *      THE CHANNEL TABLE, AND WILL BE RESTORED THERE WHEN DONE.
184X *
185X *      NORMALLY, THE AIO.XXX INFORMATION WOULD BE OBTAINED DIRECTLY
186X *      FROM VARIOUS SYSTEM TABLES VIA POINTER REGISTERS. SINCE THE
187X *      8080 HAS NO GOOD INDEXED ADDRESSING, THE DATA IS MANUALLY
188X *      COPIED INTO THE AIO.XXX CELLS BEFORE PROCESSING, AND
189X *      BACKDATED AFTER PROCESSING.
190X
041.040 191X AIO.VEC DS      3      JUMP INSTRUCTION
041.041 192X AIO.DDA EQU      *-2    DEVICE DRIVER ADDRESS
041.043 193X AIO.FLG DS      1      FLAG BYTE
041.044 194X AIO.GRT DS      2      ADDRESS OF GROUP RESERV TABLE
041.046 195X AIO.SPG DS      1      SECTORS PER GROUP
041.047 196X AIO.CGN DS      1      CURRENT GROUP NUMBER
041.050 197X AIO.CSI DS      1      CURRENT SECTOR INDEX
041.051 198X AIO.LGN DS      1      LAST GROUP NUMBER
041.052 199X AIO.LSI DS      1      LAST SECTOR INDEX
041.053 200X AIO.DTA DS      2      DEVICE TABLE ADDRESS
041.055 201X AIO.DES DS      2      DIRECTORY SECTOR
041.057 202X AIO.DEV DS      2      DEVICE CODE
041.061 203X AIO.UNI DS      1      UNIT NUMBER (0-9)

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	204X			
041.062	205X	AIO.DIR DS	DIRELEN	DIRECTORY ENTRY
	206X			
041.111	207X	AIO.CNT DS	1	SECTOR COUNT
041.112	208X	AIO.EOM DS	1	END OF MEDIA FLAG
041.113	209X	AIO.EOF DS	1	END OF FILE FLAG
041.114	210X	AIO.TFP DS	2	TEMP FILE POINTERS
041.116	211X	AIO.CHA DS	2	ADDRESS OF CHANNEL BLOCK (IOC.DDA)

041.120	213X	S.SCR DS	2	SYSTEM SCRATCH AREA ADDRESS
041.122	214	XTEXT	ESVAL	

216X ** S.VAL - SYSTEM VALUE DEFINITIONS.

217X *

218X * THESE VALUES ARE SET AND MAINTAINED BY THE SYSTEM.

219X *

220X * THE DECK HOSEQU MUST BE MODIFIED WHEN THIS IS MODIFIED.

221X

222X

040.277	223X	ORG	S.VAL	
---------	------	-----	-------	--

224X

040.277	225X	S.DATE DS	9	SYSTEM DATE (IN ASCII)
---------	------	-----------	---	------------------------

040.310	226X	S.DATC DS	2	CODED DATE
---------	------	-----------	---	------------

040.312	227X	S.TIME DS	4	TIME FROM MIDNIGHT (IN TICS)
---------	------	-----------	---	------------------------------

040.316	228X	S.HIMEM DS	2	HARDWARE HIGH MEMORY ADDRESS+1
---------	------	------------	---	--------------------------------

229X

040.320	230X	S.SYSM DS	2	FWA RESIDENT SYSTEM
---------	------	-----------	---	---------------------

231X

040.322	232X	S.USRM DS	2	LWA USER MEMORY
---------	------	-----------	---	-----------------

233X

040.324	234X	S.OMAX DS	2	MAX OVERLAY SIZE FOR SYSTEM
---------	------	-----------	---	-----------------------------

235X

236X

237X ** THE FOLLOWING FIVE CELLS SHOULD BE MODIFIED/READ ONLY VIA THE .CONSL SYSCALL

238X

000.200	239X	CSL.ECH EQU	10000000B	SUPPRESS ECHO
---------	------	-------------	-----------	---------------

000.002	240X	CSL.WRP EQU	00000010B	WRAP LINES AT WIDTH
---------	------	-------------	-----------	---------------------

000.001	241X	CSL.CHR EQU	00000001B	OPERATE IN CHARACTER MODE
---------	------	-------------	-----------	---------------------------

242X

000.000	243X	I.CSLMD EQU	0	S.CSLMD IS FIRST BYTE
---------	------	-------------	---	-----------------------

040.326	244X	S.CSLMD DS	1	CONSOLE MODE
---------	------	------------	---	--------------

245X

000.200	246X	CTP.BKS EQU	10000000B	TERMINAL PROCESSES BACKSPACES
---------	------	-------------	-----------	-------------------------------

000.040	247X	CTP.MLI EQU	00100000B	MAP LOWER CASE TO UPPER ON INPUT
---------	------	-------------	-----------	----------------------------------

000.020	248X	CTP.MLO EQU	00010000B	MAP LOWER CASE TO UPPER ON OUTPUT
---------	------	-------------	-----------	-----------------------------------

000.010	249X	CTP.2SB EQU	00001000B	TERMINAL NEEDS TWO STOP BITS
---------	------	-------------	-----------	------------------------------

000.002	250X	CTP.BKM EQU	00000010B	MAP BKSP (UPON INPUT) TO RUBOUT
---------	------	-------------	-----------	---------------------------------

000.001	251X	CTP.TAB EQU	00000001B	TERMINAL SUPPORTS TAB CHARACTERS
---------	------	-------------	-----------	----------------------------------

252X

000.001	253X	I.CONTY EQU	1	S.CONTY IS 2ND BYTE
---------	------	-------------	---	---------------------

ESVAL

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000.000	254X	ERRNZ	*-S.CSLMD-I.CONTY	
040.327	255X	S.CONTY DS	1	CONSOLE TYPE FLAGS
000.002	256X	I.CUSOR EQU	2	S.CUSOR IS 3RD BYTE
000.000	257X	ERRNZ	*-S.CSLMD-I.CUSOR	
040.330	258X	S.CUSOR DS	1	CURRENT CURSOR POSITION
000.003	259X	I.CONWI EQU	3	S.CONWI IS 4TH BYTE
000.000	260X	ERRNZ	*-S.CSLMD-I.CONWI	
040.331	261X	S.CONWI DS	1	CONSOLE WIDTH
	262X			
000.001	263X	CO.FLG EQU	00000001B	CTL-Q FLAG
000.200	264X	CS.FLG EQU	10000000B	CTL-S FLAG
	265X			
000.004	266X	I.CONFL EQU	4	S.CONFL IS 5TH BYTE
000.000	267X	ERRNZ	*-S.CSLMD-I.CONFL	
040.332	268X	S.CONFL DS	1	CONSOLE FLAGS
	269X			
040.333	270X	S.CAADR DS	2	ADDRESS FOR ABORT PROCESSING (>256 IF VALID)
040.335	271X	S.CCTAB DS	6	ADDR FOR CTL-A, CTL-B, CTL-C PROCESSING
	272			
040.343	273	XTEXT	ASCII	
	275X	**	ASCII CHARACTER EQUIVALENCES.	
	276X			
000.015	277X	CR EQU	13	CARRIAGE RETURN
000.012	278X	LF EQU	10	LINE FEED
000.200	279X	NULL EQU	200H	PAD CHARACTER
000.000	280X	NUL2 EQU	0	
000.007	281X	BELL EQU	7	BELL CHARACTER
000.177	282X	RUBOUT EQU	177H	
000.010	283X	BKSP EQU	10H	CTL-H
000.026	284X	C.SYN EQU	26H	SYNC
000.002	285X	C.STX EQU	2	STX
000.047	286X	QUOTE EQU	47H	
000.011	287X	TAB EQU	11H	
000.033	288X	ESC EQU	33H	
000.012	289X	NL EQU	12H	NEW LINE (HDOS SYSTEMS)
000.212	290X	ENL EQU	NL+200H	NL + END-OF-LINE-FLAG
000.014	291X	FF EQU	14H	FORM FEED
000.001	292X	CTLA EQU	01H	CTL-A
000.002	293X	CTLB EQU	02H	CTL-B
000.003	294X	CTLC EQU	03H	CTL-C
000.004	295X	CTLD EQU	04H	CTL-D
000.017	296X	CTLQ EQU	17H	CTL-Q
000.020	297X	CTLP EQU	20H	CTL-P
000.021	298X	CTLQ EQU	21H	CTL-Q
000.023	299X	CTLS EQU	23H	CTL-S
000.032	300X	CTLZ EQU	32H	CTL-Z
040.343	301	XTEXT	DDDEF	

DDDEF

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303X ** DEVICE DRIVER COMMUNICATION FLAGS.

304X *

305X

000.000

306X

ORG 0

307X

000.000

308X

DC.REA DS 1

READ

000.001

309X

DC.WRI DS 1

WRITE

000.002

310X

DC.RER DS 1

READ REGARDLESS

000.003

311X

DC.OPR DS 1

OPEN FOR READ

000.004

312X

DC.OPW DS 1

OPEN FOR WRITE

000.005

313X

DC.OPU DS 1

OPEN FOR UPDATE

000.006

314X

DC.CLO DS 1

CLOSE

000.007

315X

DC.ABT DS 1

ABORT

000.010

316X

DC.MOU DS 1

MOUNT DEVICE

000.011

317X

DC.LOD DS 1

LOAD DEVICE DRIVER

000.012

318X

DC.MAX DS 1

MAXIMUM ENTRY INDEX

000.013

319

XTEXT DEVDEF

321X ** DEVICE TABLE ENTRIES.

322X

000.000

323X

ORG 0

324X

000.000

325X

DEV.NAM DS 2

DEVICE NAME

000.000

326X

DV.EL EQU 00000000B

END OF DEVICE LIST FLAG

000.001

327X

DV.NU EQU 00000001B

DEVICE ENTRY NOT IN USE

328X

000.002

329X

DEV.RES DS 1

DRIVER RESIDENCE CODE

000.001

330X

DR.IM EQU 00000001B

DRIVER IN MEMORY

000.002

331X

DR.PR EQU 00000010B

DRIVER PERMANENTLY RESIDENT

332X

000.003

333X

DEV.JMP DS 1

JMP TO PROCESSOR

000.004

334X

DEV.IDA DS 2

DRIVER ADDRESS

000.006

335X

DEV.FLG DS 1

FLAG BYTE

000.001

336X

DT.DD EQU 00000001B

DIRECTORY DEVICE

000.002

337X

DT.CR EQU 00000010B

CAPABLE OF READ OPERATION

000.004

338X

DT.CW EQU 00000100B

CAPABLE OF WRITE OPERATION

339X

000.007

340X

DEV.SPG DS 1

SECTORS PER GROUP THIS DEVICE

000.010

341X

DEV.MUM DS 1

MOUNTED UNIT MASK

000.011

342X

DEV.MNU DS 1

MAXIMUM NUMBER OF UNITS

000.012

343X

DEV.UNT DS 2

ADDRESS OF UNIT SPECIFIC DATA TABLE

344X

000.014

345X

DEV.DVL DS 2

DRIVER BYTE LENGTH

000.016

346X

DEV.DVG DS 1

DRIVER ROUTINE GROUP ADDRESS

347X

000.017

348X

DEVELEN EQU *

DEVICE TABLE ENTRY LENGTH

UNT.TAB

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350X ** UNIT SPECIFIC DEVICE DATA TABLE ENTRIES

000.000	351X				
	352X	ORG	0		
	353X				
000.000	354X	UNT.FLG	DS	1	UNIT SPECIFIC *DEV.FLG*
000.001	355X	UNT.GRT	DS	2	ADDRESS OF GROUP RESERVATION TABLE (IF DT,DD)
000.003	356X	UNT.GTS	DS	2	GRT SECTOR NUMBER
000.005	357X	UNT.DIS	DS	2	DIRECTORY FIRST SECTOR NUMBER
	358X				
000.007	359X	UNT.SIZ	EQU	*	SIZE OF UNIT SPECIFIC DATA TABLE PER UNIT
000.007	360	XTEXT	DVDDEF		

362X ** DEVICE DRIVER EQUIVALENCES.

	363X				
000.307	364X	DVD.FLV	EQU	3070	DEVICE DRIVER FLAG VALUE
	365X				
000.006	366X	ORG	PIC.COD		STARTS AT PIC CODE AREA
	367X				
000.006	368X	DVD.DVD	DS	1	MUST BE DVD.FLV, FLAGS TO HDOS AS DRIVER
000.007	369X	DVD.CAP	DS	1	DEVICE CAPABILITY FLAG
000.010	370X	DVD.MUM	DS	1	MOUNTED UNIT MASK
000.011	371X	DVD.MNU	DS	1	MAXIMUM NUMBER OF UNITS
000.012	372X	DVD.UFL	DS	8	UNIT SUB-CAPABILITY FLAGS FOR UNITS 0-7
000.022	373X	DVD.SET	DS	1	= DVD.FLV IFF DRIVER WILL TAKE SET OPTIONS
000.023	374X		DS	24	RESERVED, MUST BE 0
000.053	375X	DVD.STE	EQU	*	ENTRY FOR 'SET' INVOCATION
	376X				
002.000	377X	DVD.ENT	EQU	2000A	DRIVER ENTRY POINT (MUST BE MULT OF 256)
000.053	378	XTEXT	ECDEF		

380X ** ERROR CODE DEFINITIONS.

	381X				
000.000	382X	ORG	0		
000.000	383X	DS	1		NO ERROR #0
000.001	384X	EC.EOF	DS	1	END OF FILE
000.002	385X	EC.EOM	DS	1	END OF MEDIA
000.003	386X	EC.ILC	DS	1	ILLEGAL SYSCALL CODE
000.004	387X	EC.CNA	DS	1	CHANNEL NOT AVAILABLE
000.005	388X	EC.DNS	DS	1	DEVICE NOT SUITABLE
000.006	389X	EC.IDN	DS	1	ILLEGAL DEVICE NAME
000.007	390X	EC.IFN	DS	1	ILLEGAL FILE NAME
000.010	391X	EC.NRD	DS	1	NO ROOM FOR DEVICE DRIVER
000.011	392X	EC.FND	DS	1	CHANNEL NOT OPEN
000.012	393X	EC.ILR	DS	1	ILLEGAL REQUEST
000.013	394X	EC.FUC	DS	1	FILE USAGE CONFLICT
000.014	395X	EC.FNF	DS	1	FILE NAME NOT FOUND
000.015	396X	EC.UND	DS	1	UNKNOWN DEVICE
000.016	397X	EC.ICN	DS	1	ILLEGAL CHANNEL NUMBER
000.017	398X	EC.DIF	DS	1	DIRECTORY FULL
000.020	399X	EC.IFC	DS	1	ILLEGAL FILE CONTENTS
000.021	400X	EC.NEM	DS	1	NOT ENOUGH MEMORY

EDEF

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000.022	401X EC.RF	DS	1	READ FAILURE
000.023	402X EC.WF	DS	1	WRITE FAILURE
000.024	403X EC.WPV	DS	1	WRITE PROTECTION VIOLATION
000.025	404X EC.WP	DS	1	DISK WRITE PROTECTED
000.026	405X EC.FAP	DS	1	FILE ALREADY PRESENT
000.027	406X EC.DDA	DS	1	DEVICE DRIVER ABORT
000.030	407X EC.FL	DS	1	FILE LOCKED
000.031	408X EC.FAO	DS	1	FILE ALREADY OPEN
000.032	409X EC.IS	DS	1	ILLEGAL SWITCH
000.033	410X EC.UUN	DS	1	UNKNOWN UNIT NUMBER
000.034	411X EC.FNR	DS	1	FILE NAME REQUIRED
000.035	412X EC.DIW	DS	1	DEVICE IS NOT WRITABLE (OR WRITE LOCKED)
000.036	413X EC.UNA	DS	1	UNIT NOT AVAILABLE
000.037	414X EC.ILV	DS	1	ILLEGAL VALUE
000.040	415X EC.ILO	DS	1	ILLEGAL OPTION
000.041	416X EC.VPM	DS	1	VOLUME PRESENTLY MOUNTED ON DEVICE
000.042	417X EC.NVM	DS	1	NO VOLUME PRESENTLY MOUNTED
000.043	418X EC.FOD	DS	1	FILE OPEN ON DEVICE
000.044	419X EC.NPM	DS	1	NO PROVISIONS MADE FOR REMOUNTING MORE DISKS
000.045	420X EC.DNI	DS	1	DISK NOT INITIALIZED
000.046	421X EC.DNR	DS	1	DISK IS NOT READABLE
000.047	422X EC.DSC	DS	1	DISK STRUCTURE IS CORRUPT
000.050	423X EC.NCV	DS	1	NOT CORRECT VERSION OF HDOS
000.051	424X EC.NOS	DS	1	NO OPERATING SYSTEM MOUNTED
000.052	425X EC.IOI	DS	1	ILLEGAL OVERLAY INDEX
000.053	426X EC.OTL	DS	1	OVERLAY TOO LARGE
000.054	427	XTEXT	HOSDEF	

429X ** HOSDEF - DEFINE HOS PARAMETER.

430X *

431X

432X

000.026 433X VERS EQU 1*16+6 VERSION 1.6

434X

000.377 435X SYSCALL EQU 3770 SYSCALL INSTRUCTION

436X

437X

000.000 438X ORG 0

439X

440X *

RESIDENT FUNCTIONS

441X

000.000 442X .EXIT DS 1 EXIT (MUST BE FIRST)

000.001 443X .SCIN DS 1 SCIN

000.002 444X .SCOUT DS 1 SCOUT

000.003 445X .PRINT DS 1 PRINT

000.004 446X .READ DS 1 READ

000.005 447X .WRITE DS 1 WRITE

000.006 448X .CONSL DS 1 SET/CLEAR CONSOLE OPTIONS

000.007 449X .CLRCD DS 1 CLEAR CONSOLE BUFFER

000.010 450X .LOADO DS 1 LOAD AN OVERLAY

000.011 451X .VERS DS 1 RETURN HDOS VERSION NUMBER

000.012 452X .SYSRES DS 1 PRECEDING FUNCTIONS ARE RESIDENT

453X

454X

HOSDEF

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455X * *HDOSOVLO.SYS* FUNCTIONS

000.040	456X				
	457X	ORG	40A		
	458X				
000.040	459X	.LINK	DS	1	LINK (MUST BE FIRST)
000.041	460X	.CTLCL	DS	1	CTL-C
000.042	461X	.OPENR	DS	1	OPENR
000.043	462X	.OPENW	DS	1	OPENW
000.044	463X	.OPENU	DS	1	OPENU
000.045	464X	.OPENC	DS	1	OPENC
000.046	465X	.CLOSE	DS	1	CLOSE
000.047	466X	.POSIT	DS	1	POSITION
000.050	467X	.DELET	DS	1	DELETE
000.051	468X	.RENAM	DS	1	RENAME
000.052	469X	.SETTP	DS	1	SETTOP
000.053	470X	.DECODE	DS	1	NAME DECODE
000.054	471X	.NAME	DS	1	GET FILE NAME FROM CHANNEL
000.055	472X	.CLEAR	DS	1	CLEAR CHAN
000.056	473X	.CLEARA	DS	1	CLEAR ALL CHANS
000.057	474X	.ERROR	DS	1	LOOKUP ERROR
000.060	475X	.CHFLG	DS	1	CHANGE FLAGS
000.061	476X	.DISMT	DS	1	FLAG SYSTEM DISK DISMOUNTED
000.062	477X	.LOADD	DS	1	LOAD DEVICE DRIVER
	478X				
	479X				

480X * *HDOSOVLI.SYS* FUNCTIONS

000.200	481X				
	482X	ORG	2000		
	483X				
000.200	484X	.MOUNT	DS	1	MOUNT (MUST BE FIRST)
000.201	485X	.DMOUN	DS	1	DISMOUNT
000.202	486X	.MONMS	DS	1	MOUNT/NO MESSAGE
000.203	487X	.DMNMS	DS	1	DISMOUNT/NO MESSAGE
000.204	488X	.RESET	DS	1	RESET = DISMOUNT/MOUNT OF UNIT
000.205	489	XTEXT	MTR		

492X ** MTR - PAM/8 EQUIVALENCES.

493X *

494X * THIS DECK CONTAINS SYMBOLIC DEFINITIONS USED TO

495X * MAKE USE OF THE PAM/8 CODE AND CONTROL BYTES.

497X ** IO PORTS

498X

000.360	499X IP.PAD	EQU	360Q	PAD INPUT PORT
000.360	500X OP.CTL	EQU	360Q	CONTROL OUTPUT PORT
000.360	501X OP.DIG	EQU	360Q	DIGIT SELECT OUTPUT PORT
000.361	502X OP.SEG	EQU	361Q	SEGMENT SELECT OUTPUT PORT

504X ** FRONT PANEL CONTROL BITS.

505X

000.020	506X CB.SSI	EQU	00010000B	SINGLE STEP INTERRUPT
000.040	507X CB.MTL	EQU	00100000B	MONITOR LIGHT
000.100	508X CB.CLI	EQU	01000000B	CLOCK INTERRUPT ENABLE
000.200	509X CB.SPK	EQU	10000000B	SPEAKER ENABLE

511X ** MONITOR MODE FLAGS.

512X

000.000	513X DM.MR	EQU	0	MEMORY READ
000.001	514X DM.MW	EQU	1	MEMORY WRITE
000.002	515X DM.RR	EQU	2	REGISTER READ
000.003	516X DM.RW	EQU	3	REGISTER WRITE

518X ** USER OPTION BITS.

519X *

520X * THESE BITS ARE SET IN CELL MFLAG.

521X

000.200	522X UO.HLT	EQU	10000000B	DISABLE HALT PROCESSING
000.100	523X UO.NFR	EQU	CB.CLI	NO REFRESH OF FRONT PANEL
000.002	524X UO.DDU	EQU	00000010B	DISABLE DISPLAY UPDATE
000.001	525X UO.CLK	EQU	00000001B	ALLOW PRIVATE INTERRUPT PROCESSING

527X ** MONITOR IDENTIFICATION FLAGS

528X *

529X * THESE BYTES IDENTIFY THE ROM MONITOR.

530X * THEY ARE THE VARIOUS VALUES OF LOCATION IDENT

531X

000.021	532X M.PAMB	EQU	021Q	'LXI' INSTRUCTION AT 000.000 IN PAM-8
000.303	533X M.FOX	EQU	303Q	'JMP' INSTRUCTION AT 000.000 IN FOX ROM

PAM/8 EQUIVALENCES.

ENTRY

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535X ** ROUTINE ENTRY POINTS.

536X *

537X

000.000	538X .IDENT	EQU	0000A	IDENTIFICATION LOCATION
000.053	539X .DLY	EQU	0053A	DELAY
001.267	540X .LOAD	EQU	1267A	TAPE LOAD
001.374	541X .DUMP	EQU	1374A	TAPE DUMP
002.136	542X .ALARM	EQU	2136A	ALARM ROUTINE
002.140	543X .HORN	EQU	2140A	HORN
002.172	544X .CTC	EQU	2172A	CHECK TAPE CHECKSUM
002.205	545X .TPERR	EQU	2205A	TAPE ERROR ROUTINE
002.264	546X .PCHL	EQU	2264A	PCHL INSTRUCTION
002.265	547X .SRS	EQU	2265A	SCAN RECORD START
002.325	548X .RNP	EQU	2325A	READ NEXT PAIR
002.331	549X .RNB	EQU	2331A	READ NEXT BYTE
002.347	550X .CRC	EQU	2347A	CRC-16 CALCULATOR
003.017	551X .WNP	EQU	3017A	WRITE NEXT PAIR
003.024	552X .WNB	EQU	3024A	WRITE NEXT BYTE
003.122	553X .DOD	EQU	3122A	DECODE FOR OCTAL DISPLAY
003.260	554X .RCK	EQU	3260A	READ CONSOLE KEYS
003.356	555X .DODA	EQU	3356A	SEGMENT CODE TABLE

557X ** RAM CELLS USED BY HBMTX.

558X *

559X

040.000	560X .START	EQU	40000A	START DUMP ADDRESS
040.002	561X .IDWRK	EQU	40002A	IN OR OUT INSTRUCTION
040.005	562X .REGI	EQU	40005A	DISPLAYED REGISTER INDEX
040.006	563X .DSPROT	EQU	40006A	PERIOD FLAG BYTE
040.007	564X .DSPMOD	EQU	40007A	DISPLAY MODE
040.010	565X .MFLAG	EQU	40010A	USER OPTION BYTE
040.011	566X .CTLFLG	EQU	40011A	PANEL CONTROL BYTE
040.013	567X .ALEDS	EQU	40013A	ABUSS LEDS
040.021	568X .DLEDS	EQU	40021A	DBUSS LEDS
040.024	569X .ABUSS	EQU	40024A	ABUSS REGISTER
040.027	570X .CRCSUM	EQU	40027A	CRCSUM WORD
040.031	571X .TPERRX	EQU	40031A	TAPE ERROR EXIT VECTOR
040.033	572X .TICNT	EQU	40033A	CLOCK TICK COUNTER
040.035	573X .REGPTR	EQU	40035A	REGISTER POINTER
040.037	574X .UIVEC	EQU	40037A	USER INTERRUPT VECTORS
000.205	575	XTEXT	SETCAL	

577X ** SETCAL - FIXED ADDRESS ROUTINES IN SET

578X *

579X *

580X * THESE VECTORS ARE FIXED ENTRY POINTS INTO THE

581X * SET PROGRAM TO UTILIZED BY DEVICE DRIVERS IN

582X * PROCESSING SET COMMANDS.

583X

042.201

584X

ORG USERFWA+1

585X

PAM/8 EQUIVALENCES.

SETCAL

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042.201	586X \$SNA	DS	3	
	587X			
042.204	588X \$DCS	DS	3	
	589X			
042.207	590X \$CNA	DS	3	
	591X			
042.212	592X \$FST	DS	3	
	593X			
042.215	594X \$TBLS	DS	3	
	595X			
042.220	596X \$WTBLS	DS	3	
	597X			
042.223	598X \$LBD	DS	3	
	599X			
042.226	600X \$SOP	DS	3	
	601X			
042.231	602X \$PBF	DS	3	
	603X			
042.234	604X \$PBV	DS	3	
	605X			
042.237	606X	DS	60	RESERVED
042.333	607	XTEXT	U8250	

609X ** 8250 UART CONTROL AND BIT DEFINITIONS.

	610X			
000.350	611X SC.ACE	EQU	3500	SYSTEM CONSOLE PORT IF 8250 ACE
000.156	612X AC.DLY	EQU	110	220 MIL. SEC. DELAY FOR 8250
	613X			
000.000	614X UR.RBR	EQU	0	RECEIVER BUFFER REGISTER (READ ONLY)
	615X			
000.000	616X UR.THR	EQU	0	TRANSMITTER HOLDING REGISTER (WRITE ONLY)
	617X			
000.000	618X UR.DLL	EQU	0	DIVISOR LATCH (LEAST SIGNIFICANT)
	619X			
000.001	620X UR.DLM	EQU	1	DIVISOR LATCH (MOST SIGNIFICANT)
	621X			
000.001	622X UR.IER	EQU	1	INTERRUPT ENABLE REGISTER
000.001	623X UC.EDA	EQU	00000001B	ENABLE RECEIVED DATA AVAILABLE INTERRUPT
000.002	624X UC.TRE	EQU	00000010B	ENABLE TRANSMIT HOLD REGISTER EMPTY INTERRUPT
000.004	625X UC.RSI	EQU	00000100B	ENABLE RECEIVE STATUS INTERRUPT
000.010	626X UC.MSI	EQU	00001000B	ENABLE MODEM STATUS INTERRUPT
	627X			
000.002	628X UR.IIR	EQU	2	INTERRUPT IDENTIFICATION REGISTER
000.001	629X UC.IIP	EQU	00000001B	INVERTED INTERRUPT PENDING (0 MEANS PENDING)
000.006	630X UC.IID	EQU	00000110B	INTERRUPT ID
	631X			
000.003	632X UR.LCR	EQU	3	LINE CONTROL REGISTER
000.000	633X UC.5BW	EQU	00000000B	5 BIT WORDS
000.001	634X UC.6BW	EQU	00000001B	6 BIT WORDS
000.002	635X UC.7BW	EQU	00000010B	7 BIT WORDS
000.003	636X UC.8BW	EQU	00000011B	8 BIT WORDS
000.004	637X UC.2SB	EQU	00000100B	TWO STOP BITS SELECTED
000.010	638X UC.PEN	EQU	00001000B	PARITY COMPUTATION ENABLED

FAM/8.EQUIVALENCES.

U8250

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000.020	639X UC.EPS EQU	00010000B	EVEN PARITY SELECT
000.040	640X UC.SKP EQU	00100000B	STICK PARITY
000.100	641X UC.SB EQU	01000000B	SET BREAK
000.200	642X UC.DLA EQU	10000000B	DIVISOR LATCH ACCESS
	643X		
000.004	644X UR.MCR EQU	4	MODEM CONTROL REGISTER
000.001	645X UC.DTR EQU	00000001B	DATA TERMINAL READY
000.002	646X UC.RTS EQU	00000010B	REQUEST TO SEND
000.004	647X UC.OU1 EQU	00000100B	OUT 1
000.010	648X UC.OU2 EQU	00001000B	OUT 2
000.020	649X UC.LOO EQU	00010000B	LOOP
	650X		
000.005	651X UR.LSR EQU	5	LINE STATUS REGISTER
000.001	652X UC.DR EQU	00000001B	DATA READY
000.002	653X UC.OR EQU	00000010B	OVERRUN
000.004	654X UC.FE EQU	00000100B	PARITY ERROR
000.010	655X UC.FE EQU	00001000B	FRAMING ERROR
000.020	656X UC.BI EQU	00010000B	BREAK INTERRUPT
000.040	657X UC.THE EQU	00100000B	TRANSMITTER HOLDING REGISTER EMPTY
000.100	658X UC.TSE EQU	01000000B	TRANSMITTER SHIFT REGISTER EMPTY
	659X		
000.004	660X UR.MSR EQU	4	MODEM STATUS REGISTER
000.001	661X UC.DCS EQU	00000001B	DELTA CLEAR TO SEND
000.002	662X UC.DDR EQU	00000010B	DELTA DATA SET READY
000.004	663X UC.TER EQU	00000100B	TRAILING EDGE OF RING
000.010	664X UC.DRL EQU	00001000B	DELTA RECEIVE LINE SIGNAL DETECT
000.020	665X UC.CTS EQU	00010000B	CLEAR TO SEND
000.040	666X UC.DSR EQU	00100000B	DATA SET READY
000.100	667X UC.RI EQU	01000000B	RING INDICATOR
000.200	668X UC.RLS EQU	10000000B	RECEIVED LINE SIGNAL DETECT
	669	CODE PIC	
	670		
	671 *	CODE HEADER	
	672		
000.006 307	673	DB DVDFLV	
000.007 004	674	DB DT.CW	DEVICE CAPABILITY: WRITE
000.010 001	675	DB 00000001B	MOUNTED UNIT MASK
000.011 001	676	DB 1	MAXIMUM OF ONE UNIT
000.012 004	677	DB DT.CW	0: CAPABLE OF WRITE
000.013 004	678	DS 7	1-7: IGNORED
000.022 307	679	DB DVDFLV	
000.000	680	ERRNZ *-0230	
000.023	681	DS DVD.STE-0230	RESERVED AREAS

684 *** ASSEMBLY CONSTANTS

	685 *			
	686 *			
	687			
000.303	688 MI.JMP EQU	303Q		JUMP
000.302	689 MI.JNZ EQU	302Q		JUMP-NON-ZERO
000.315	690 MI.CALL EQU	315Q		UNCONDITIONAL CALL
000.314	691 MI.CZ EQU	314Q		CALL-ZERO

693 ** FLAG DEFINITIONS

	694 *			
	695			
000.001	696 F.FORM EQU	00000001B		FORM-FEED UPON CLOSE

698 ** DEFAULT DEVICE DEFINITIONS

	699 *			
	700			
000.340	701 DFLT.PN EQU	340Q		DEFAULT DBO: ADDRESS
000.140	702 DFLT.BD EQU	000140A		1200 BAUD
	703			
000.001	704 DFLT.FG EQU	F.FORM		DEFAULT FLAG: FORM
000.006	705 DFLT.LI EQU	6		LINES/INCH
000.120	706 DFLT.WD EQU	80		WIDTH
000.074	707 DFLT.LP EQU	60		LINES/PAGE

709 ** SPECIAL CHARACTERS

	710 *			
	711			
000.003	712 ETX EQU	3		DIABLO END-OF-TEXT HANDSHAKE
000.006	713 ACK EQU	6		DIABLO ACKNOWLEDGE HANDSHAKE
000.040	714 BURST EQU	32		DIABLO BURST COUNT

SET ENTRY

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```

717 ***      SET ENTRY
718 *
719 *      SET COMMANDS ENTER HERE
720 *
721 *      ENTRY: (DE)  = LINE POINTER
722 *                (A)  = UNIT NUMBER
723 *
724 *      EXIT: (PSW)  = 'C' CLEAR IF NO ERROR
725 *                = 'C' SET  IF  ERROR
726 *                (A) = ERROR CODE
727 *
728 *      USES:  ALL
729 *
730 *
000.053      731 SETNTR EQU      *
000.000      732 ERRNZ  *-DVD,STE
000.053 247   733 ANA      A
000.054 302 103 000 734 JNZ      SET1      ALLOW ONLY UNIT 0
735 *
000.057 102   736 MOV      B,D
000.060 113   737 MOV      C,E
000.061 021 367 001 738 LXI      D,PRCTAB
000.064 041 170 001 739 LXI      H,OPTTAB
000.067 315 226 042 740 CALL    $SOP
000.072 330   741 RC              ERROR
000.073 315 201 042 742 CALL    $SNA
000.076 310   743 RZ              AT THE END OF THE LINE
744 *
000.077 076 040   745 MVI      A,EC,ILO      ILLEGAL OPTION
000.101 067   746 STC
000.102 311   747 RET
748 *
000.103 076 033   749 SET1     MVI      A,EC,UUN
000.105 067   750 STC
000.106 311   751 RET

```



```
755 **      FLAG      -  PROCESS FLAG OPTIONS
756 *
757 *      PROCESS FLAG TYPE OPTION SPECIFICATIONS
758 *
759 *
760 *      ENTRY, EXIT, AND USE SAME AS PBF
761 *
762 *
042.231 763 FLAG      EQU      $PBF
```

```
765 **      VAL      -  PROCESS VALUE OPTIONS
766 *
767 *      PROCESS BYTE VALUE OPTIONS
768 *
769 *
770 *      ENTRY, EXIT, AND USE SAME AS PBV
771 *
772 *
042.234 773 VAL      EQU      $PBV
```

```
775 **      BAUD      -  PROCESS BAUD RATE OPTION
776 *
777 *      PROCESS BAUD RATE OPTION SPECIFICATION
778 *
779 *      ENTRY:  (BC)  =  TEXT ADDRESS
780 *              (PSW) =  'C' CLEAR IF NO ERROR
781 *              'C' SET  IF  ERROR
782 *              (A) =  ERROR CODE
783 *
784 *      EXIT:  (BC)  =  UPDATED TEXT ADDRESS
785 *
786 *      USES:  ALL
787 *
788 *
000.107 076 012 789 BAUD      MVI      A,10      DEFAULT RADIX IS 10
000.111 315 207 042 790      CALL     $CNA      GET BAUD RATE
000.114 076 037 791      MVI      A,$C.ILV  ASSUME ILLEGAL VALUE
000.116 330 792      RC          THERE WAS AN ERROR GETTING VALUE
793 *
794 *      XCHG
795 *      CALL     $LBD      (DE) = BAUD RATE
000.120 315 223 042 796      MVI      A,$C.ILV  (HL) = BAUD RATE DIVISOR
000.123 076 037 797      STC          ASSUME ILLEGAL VALUE
000.125 067 798      RNZ          THE BAUD RATE WAS NOT FOUND IN THE TABLE
000.126 300 799 *
000.127 042 052 004 800      SHLD     D,BAUD    SET UP THE BAUD RATE IN THE TABLE
000.132 257 801      XRA      A      CLEAR THE CARRY, ETC.
000.133 311 802      RET
```

```

804 **      HELP      -  PROCESS HELP SET OPTION
805 *
806 *      LIST THE VALID SET OPTIONS FOR THIS DEVICE ON THE
807 *      SYSTEM CONSOLE.
808 *
809 *      ENTRY:  NONE
810 *
811 *      EXIT:   NONE
812 *
813 *      USES:   (PSW)
814 *
815
000.134      816  HELP  EQU      *
000.134 315 136 031 817      CALL $TYPTX
000.137 012 012 123 818      DB      NL,NL,'Set Options:',NL,NL
000.157 101 125 124 819      DB      'AUTO-CR      Map Newline Character to <CR><LF>',NL
000.232 106 117 122 820      DB      'FORM      Form-Feed at Close',NL
000.263 124 101 102 821      DB      'TABX      Expand Tabs',NL
000.305 012 116 157 822      DB      NL,'Note:      The above options may be preceded',NL
000.356 011 142 171 823      DB      '      by NO to cancel their effect.',NL,NL
001.016 102 101 125 824      DB      'BAUD      n      Baud Rate',NL
001.037 110 105 114 825      DB      'HELP      Type this Text',NL
001.064 120 101 107 826      DB      'PAGE      n      Lines/Page',NL
001.106 120 117 122 827      DB      'PORT      n      Port Number',NL
001.131 127 111 104 828      DB      'WIDTH     n      Chars/Line [0-158]',NL
001.164 012 212      829      DB      NL,ENL
001.166 257          830      XRA      A
001.167 311          831      RET

```

834 *** TABLES
835 *
836 *

838 ** OPTTAB - OPTION TABLE
839 *

001.170	366	001	840	OPTTAB	DW	OPTTAB
001.172	006		842		DB	6
			843			
001.173	101	125 124	844		DB	'AUTO-C', 'R'+200Q, FLAGI
001.203	377	302	845		DB	377Q, MI, JNZ
001.205	027	003	846		DW	DBOA
001.207	000		847		DB	0
			848			
001.210	116	117 101	849		DB	'NOAUTO-C', 'R'+200Q, FLAGI
001.222	377	303	850		DB	377Q, MI, JMP
001.224	027	003	851		DW	DBOA
001.226	000		852		DB	0
			853			
001.227	106	117 122	854		DB	'FOR', 'M'+200Q, FLAGI, F.FORM, F.FORM
001.236	051	004	855		DW	D.FLAG
001.240	000		856		DB	0
			857			
001.241	116	117 106	858		DB	'NOFOR', 'M'+200Q, FLAGI, F.FORM, 0
001.252	051	004	859		DW	D.FLAG
001.254	000		860		DB	0
			861			
001.255	124	101 102	862		DB	'TAB', 'X'+200Q, FLAGI, 377Q, MI, JNZ
001.264	376	002	863		DW	DBOB
001.266	000		864		DB	0
			865			
001.267	116	117 124	866		DB	'NOTAB', 'X'+200Q, FLAGI, 377Q, MI, JMP
001.300	376	002	867		DW	DBOB
001.302	000		868		DB	0
			869			
001.303	120	101 107	870		DB	'PAG', 'E'+200Q, VALI, 10, 0, 255
001.313	060	004	871		DW	D.LNPG
			872			
001.315	120	117 122	873		DB	'POR', 'T'+200Q, VALI, 8, 0, 377Q
001.325	055	004	874		DW	D.PORT
			875			
001.327	127	111 104	876		DB	'WIDT', 'H'+200Q, VALI, 10, 0, 158
001.340	057	004	877		DW	D.WID
			878			
001.342	102	101 125	879		DB	'BAU', 'D'+200Q, BAUDI
001.347	000	000 000	880		DB	0, 0, 0, 0, 0
			881			
001.354	110	105 114	882		DB	'HEL', 'P'+200Q, HELPI
001.361	000	000 000	883		DB	0, 0, 0, 0, 0
			884			
001.366	000		885	OPTTAB	DB	0

SET OPTION TABLES

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	887	**	PRCTAB	-	PROCESSOR TABLE
	888	*			
	889				
001.367	890	PRCTAB	DS	0	
	891				
000.000	892	BAUDI	EQU	*-PRCTAB/2	
001.367 107 000	893		DW	BAUD	
	894				
000.001	895	FLAGI	EQU	*-PRCTAB/2	
001.371 231 042	896		DW	FLAG	
	897				
000.002	898	HELPI	EQU	*-PRCTAB/2	
001.373 134 000	899		DW	HELP	
	900				
000.003	901	VALI	EQU	*-PRCTAB/2	
001.375 234 042	902		DW	VAL	

001.377	904	.	SET	1377A	
000.000	905		ERRNZ	*-	
001.377	906		DS	DVD.ENT-	

```

909 *** DBDVD ENTRY POINT
910 *
911 * ENTRY: (A) = PROCESS CODE
912 * (BC) = BYTE COUNT
913 * (DE) = BUFFER ADDRESS
914 *
915 * EXIT: (PSW) = 'C' CLEAR IF NO ERROR
916 * = 'C' SET IF ERROR
917 * (A) = ERROR CODE
918 *
919 * USES: ALL
920 *
921 *
002.000 922 DBDVD EQU *
000.000 923 ERRNZ *-DVD.ENT
002.000 376 011 924 CPI 9
002.002 322 022 002 925 JNC DBD1 ILLEGAL PROCESS CODE
926 *
002.005 315 076 031 927 CALL $TBRA ENTRY PROCESSOR
002.010 016 928 DB NSUIT-* READ
002.011 154 929 DB WRITE-* WRITE
002.012 014 930 DB NSUIT-* READR
002.013 013 931 DB NSUIT-* OPENR
002.014 023 932 DB OPENW-* OPENW
002.015 011 933 DB NSUIT-* OPENU
002.016 113 934 DB CLOSE-* CLOSE
002.017 013 935 DB ABORT-* ABORT
002.020 006 936 DB NSUIT-* MOUNT
002.021 014 937 DB LOADD-* LOADD
938 *
002.022 076 012 939 DBD1 MVI A,EC:ILR ILLEGAL REQUEST
002.024 067 940 STC
002.025 311 941 RET
  
```

NSUIT/ABORT/LOADD

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```

944 ***      NSUIT  -  NOT SUITABLE
945 *
946 *      ROUTINE TO HANDLE UNSUITABLE DEVICE DRIVER REQUESTS.
947 *
948 *      ENTRY:  NONE
949 *
950 *      EXIT:   (PSW)  = 'C' SET TO FLAG ERROR
951 *              (A) = ILLEGAL REQUEST ERROR CODE
952 *
953 *      USES:   (PSW)
954 *
955
002.026      956 NSUIT  EQU      *
002.026 076 005 957      MVI    A,EC,DNS      DEVICE NOT SUITABLE
002.030 067      958      STC
002.031 311      959      RET

```

```

961 ***      ABORT  -  ABORT DEVICE
962 *
963 *      ROUTINE TO HANDLE ABORT DEVICE DRIVER REQUESTS.
964 *
965 *      ENTRY:  NONE
966 *
967 *      EXIT:   NONE
968 *
969 *      USES:   (PSW)
970 *
971
002.032      972 ABORT  EQU      *
002.032 303 131 002 973      JMP    CLOSE

```

```

975 ***      LOADD  -  LOAD DEVICE DRIVER
976 *
977 *      LOADD PROCESSES THE DEVICE DRIVER LOAD
978 *
979 *      ENTRY:  NONE
980 *
981 *      EXIT:   NONE
982 *
983 *      USES:   (PSW)
984 *
985
002.035 247      986 LOADD  ANA      A
002.036 311      987      RET

```

```

990 *** OPENW - OPEN DEVICE FOR WRITE
991 *
992 * SET UP DEVICE AND NECESSARY FLAGS FOR WRITE, THIS INCLUDES
993 * INITIALIZING THE 8250/8251.
994 *
995 * ENTRY: NONE
996 *
997 * EXIT: NONE
998 *
999 * USES: ALL
1000
002.037 1001 OPENW EQU *
002.037 315 042 004 1002 CALL UAS
002.042 076 036 1003 MVI A,EC.UNA UNIT NOT AVAILABLE
002.044 067 1004 STC
002.045 300 1005 RNZ UNIT ALREADY ASSIGNED
1006
1007 * FLAG ASSIGNED, INITIALIZE INDICES, ETC.
1008
002.046 072 050 004 1009 LDA D.ASGN
002.051 366 200 1010 ORI 10000000B
002.053 062 050 004 1011 STA D.ASGN FLAG DEVICE ASSIGNED
1012
002.056 257 1013 XRA A
002.057 062 064 004 1014 STA D.NDC ZERO NEED ONE ESC. SEQ. CHAR. FLAG
002.062 062 063 004 1015 STA D.LWE ZERO LAST CHAR. WAS ESCAPE FLAG
1016
002.065 076 040 1017 MVI A,BURST
002.067 062 065 004 1018 STA D.BURC INITIALIZE BURST COUNTER
1019
1020 * INITIALIZE UART
1021
002.072 072 055 004 1022 LDA D.PORT
002.075 052 052 004 1023 LHLD D.BAUD
1024
002.100 315 310 003 1025 CALL IB250
002.103 072 055 004 1026 LDA D.PORT
002.106 147 1027 MOV H,A
002.107 056 004 1028 MVI L,UR.MCR
002.111 076 013 1029 MVI A,UC.DTR+UC.RTS+UC.OU2 SET DATA TERM. READY, REQ. SEND, RSLD
002.113 315 030 004 1030 CALL OUT
1031
1032 * INITIALIZE CARRIAGE INDICES
1033
002.116 076 001 1034 MVI A,1
002.120 062 061 004 1035 STA D.LINX INITIALIZE LINE INDEX
002.123 076 015 1036 MVI A,CR
002.125 315 355 002 1037 CALL DBOUT RETURN HEAD, AND INITIALIZE COLUMN COUNTER
1038
002.130 311 1039 RET

```

CLOSE - CLOSE OUTPUT DEVICE

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```
1042 *** CLOSE - CLOSE THE OUTPUT DEVICE
1043 *
1044 * UNASSIGN THE DEVICE
1045 *
1046 * ENTRY: NONE
1047 *
1048 * EXIT: (PSW) = 'C' CLEAR IF NO ERROR
1049 * = 'C' SET IF ERROR
1050 * (A) = ERROR CODE
1051 *
1052 * USES: ALL
1053 *
1054 *
002.131 1055 CLOSE EQU *
002.131 315 042 004 1056 CALL UAS
002.134 076 036 1057 MVI A,EC.UNA UNIT NOT AVAILABLE
002.136 067 1058 STC
002.137 310 1059 RZ UNIT WAS NOT ASSIGNED
1060
002.140 072 050 004 1061 LDA D.ASGN
002.143 346 177 1062 ANI 01111111B
002.145 062 050 004 1063 STA D.ASGN FLAG UNIT AVAILABLE
1064
002.150 072 051 004 1065 LDA D.FLAG
002.153 346 001 1066 ANI F.FORM
002.155 310 1067 RZ NO FORM-FEED AT CLOSE
1068
002.156 076 014 1069 MVI A,FF
002.160 315 355 002 1070 CALL DBOUT
002.163 247 1071 ANA A CLEAR ERROR FLAG
002.164 311 1072 RET
```


WRITE - WRITE TO DEVICE

18:34:00 16-MAY-80

```

1075 *** WRITE - WRITE TO DEVICE
1076 *
1077 * WRITE A BUFFER FULL OF CHARACTERS TO THE OUTPUT DEVICE
1078 *
1079 * ENTRY: (BC) = BYTE COUNT
1080 * (DE) = ADDRESS OF DATA BUFFER
1081 *
1082 * EXIT: (PSW) = 'C' CLEAR IF NO ERROR
1083 * 'C' SET IF ERROR
1084 * (A) = ERROR CODE
1085 * (BC) = UNUSED BYTE COUNT
1086 * (DE) = ADDRESS OF NEXT BYTE TO BE WRITTEN
1087 *
1088 * USES: ALL
1089 *
1090
002.165 1091 WRITE EQU *
002.165 315 042 004 1092 CALL UAS
002.170 076 036 1093 MVI A,EC.UNA UNIT NOT AVAILABLE
002.172 067 1094 STC
002.173 310 1095 RZ UNIT WAS NOT ASSIGNED
1096
002.174 170 1097 WRI1 MOV A,B
002.175 261 1098 ORA C
002.176 310 1099 RZ THE LAST BYTE HAS BEEN WRITTEN
1100
002.177 315 202 003 1101 CALL CFA
002.202 302 032 002 1102 JNZ ABORT AN ABORT WAS HIT ON THE CONSOLE
1103
002.205 315 213 002 1104 CALL WRI2
002.210 303 174 002 1105 JMP WRI1

1107 ** WRI2
1108 *
1109 * (DE) = BUFFER
1110 * (BC) = COUNT
1111
002.213 315 230 002 1112 WRI2 CALL CES CHECK ESCAPE SEQUENCE FLAGS AND CHARS.
002.216 032 1113 LDAX D (A) = CHARACTER TO OUTPUT
002.217 315 355 002 1114 CALL DBOUT
002.222 013 1115 DCX B *** THIS RETURNING COUNT MAY NOT BE GOOD ***
002.223 023 1116 INX D *** IF AN ABORT CHARACTER IS HIT AT THE ***
002.224 315 302 002 1117 CALL CHP *** CORRECT TIME. ***
002.227 311 1118 RET

```

WRITE - WRITE TO DEVICE

CES

18:34:01 16-MAY-80

```

1120 **      CES      - CHECK ESCAPE SEQUENCES
1121 *
1122 *      SET THE ESCAPE SEQUENCE MONITORING FLAGS
1123 *
1124 *      ENTRY: (DE)      = BUFFER POINTER
1125 *
1126 *      EXIT:  NONE
1127 *
1128 *      USES:  PSW
1129 *
1130
002.230 072 063 004 1131 CES      LDA      D,LWE
002.233 247          1132          ANA      A
002.234 302 263 002 1133          JNZ      CES2          LAST CHARACTER WAS ESCAPE
1134
002.237 072 064 004 1135          LDA      D,NOC
002.242 247          1136          ANA      A
002.243 302 256 002 1137          JNZ      CES1          NEED ONE CHARACTER
1138
002.246 032          1139          LDAX     D
002.247 376 033      1140          CPI      ESC
002.251 300          1141          RNZ
1142
002.252 062 063 004 1143          STA      D,LWE          FLAG LAST CHARACTER AS ESCAPE
002.255 311          1144          RET
1145
002.256 257          1146 CES1      XRA      A
002.257 062 064 004 1147          STA      D,NOC          ZERO NEED ONE CHARACTER FLAG
002.262 311          1148          RET
1149
002.263 032          1150 CES2      LDAX     D
002.264 376 040      1151          CPI      ' '
002.266 332 272 002 1152          JC       CES3
002.271 257          1153          XRA      A
002.272 062 064 004 1154 CES3      STA      D,NOC          SET NOC FLAG, TRUE FOR ESC. SEQ. < ' '
002.275 257          1155          XRA      A
002.276 062 063 004 1156          STA      D,LWE          ZERO LAST CHARACTER WAS ESCAPE FLAG
002.301 311          1157          RET

```

```

1159 **      CHF      - CHECK HANDSHAKE PROTOCOL
1160 *
1161 *      WAIT ON THE HANDSHAKE PROTOCOL IF TIME TO TRY, AND NOT IN ESCAPE
1162 *      SEQUENCE.
1163 *
1164 *      ENTRY:  NONE
1165 *
1166 *      EXIT:  (PSW)      = 'Z' CLEAR IF EXITED VIA AN ABORT
1167 *              'Z' SET   IF HANDSHAKE RECEIVED
1168 *
1169 *      USES:  (PSW)
1170 *
1171
002.302 072 065 004 1172 CHF      LDA      D,BURC

```

WRITE - WRITE TO DEVICE

CHP

18:34:02 16-MAY-80

```

002.305 247      1173      ANA      A      /79.12.6C/
                1174      *      DCR      A
                1175      *      STA      D.BURC      UPDATE THE NUMBER OF CHARACTERS OUTPUT
002.306 360      1176      RP      NDT TIME TO SEND ETX      /JWT 06SEP79/
000.142          1177      ERRMI    130-BURST      BURST MUST BE <= 130 TO INSURE IT IS POSITIVE
                1178
002.307 072 064 004 1179      LDA      D.NOC
002.312 247      1180      ANA      A
002.313 300      1181      RNZ      NEED ONE MORE CHAR. FOR ESC. SEQ.
                1182
002.314 072 063 004 1183      LDA      D.LWE
002.317 247      1184      ANA      A
002.320 300      1185      RNZ      LAST CHAR. WAS START OF ESC. SEQ.
                1186
002.321 076 003      1187      MVI      A,ETX
002.323 315 355 002 1188      CALL     DBOUT
                1189
002.326 315 202 003 1190      CHP1     CALL     CFA
002.331 300      1191      RNZ      RETURN IF ABORT CHARACTER WAS HIT
                1192
002.332 315 210 003 1193      CALL     INCHAR
002.335 312 326 002 1194      JZ      CHP1      NO CHARACTER HAS BEEN RECEIVED YET.
                1195
002.340 346 177      1196      ANI      7FH      STRIP PARITY
002.342 376 006      1197      CFI      ACK
002.344 302 326 002 1198      JNZ     CHP1      WAIT FOR AN *ACK* CHARACTER
                1199
002.347 076 037      1200      MVI      A,BURST-1      /JWT 06SEP79/
002.351 062 065 004 1201      STA      D.BURC      RESET BURST COUNTER
002.354 311      1202      RET

```

```

                1204      **      DBOUT - DIABLO OUTPUT ROUTINE
                1205      *
                1206      *      MAP HDOS FORMAT TO DIABLO FORMAT IN OUTPUTTING CHARACTERS TO THE
                1207      *      DIABLO.
                1208      *
                1209      *      ENTRY: (A) = CHARACTER
                1210      *
                1211      *      EXIT: NONE
                1212      *
                1213      *      USES: (PSW)
                1214      *
                1215
002.355          1216      DBOUT     EQU      *
                1217
002.355 376 015      1218      CFI      CR
002.357 302 374 002 1219      JNZ     DB01
002.362 076 001      1220      MVI      A,1
002.364 062 062 004 1221      STA      D.COLX      SET COLUMN INDEX TO 1
002.367 076 015      1222      MVI      A,CR
002.371 303 075 003 1223      JMP     DB01
                1224
002.374 376 011      1225      DB01     CFI      TAB

```

WRITE.....WRITE TO DEVICE

DBOUT

18:34:03 16-MAY-80

```

002.376 302 025 003 1226 JNZ DB03
002.376 1227 DB08 EQU *-3 MODIFIED TO CHANGE TAB PROCESSING
003.001 076 040 1228 MVI A, ' '
003.003 315 355 002 1229 CALL DBOUT
003.006 072 062 004 1230 DB02 LDA D,COLX
003.011 075 1231 DCR A
003.012 346 007 1232 ANI 7
003.014 310 1233 RZ
1234
003.015 076 040 1235 MVI A, ' '
003.017 315 355 002 1236 CALL DBOUT OUTPUT ANOTHER SPACE
003.022 303 006 003 1237 JMP DB02
1238
003.025 376 012 1239 DB03 CPI NL
003.027 302 053 003 1241 JNZ DB04
003.027 1242 DB0A EQU *-3 TO CHANGE 'NL' PROC., (CHANGE TO JMP)
003.032 076 015 1243 MVI A, CR
003.034 315 355 002 1244 CALL DBOUT
003.037 072 061 004 1245 LDA D,LINX
003.042 074 1246 INR A
003.043 062 061 004 1247 STA D,LINX NOTE: IF NOAUTO-CR IS SET, THE LINE COUNT
003.046 076 012 1248 MVI A,NL WILL BE MESSED UP.
003.050 303 075 003 1249 JMP DB0
1250
003.053 376 014 1251 DB04 CPI FF
003.055 302 075 003 1252 JNZ DB05
003.060 076 001 1253 MVI A,1
003.062 062 062 004 1254 STA D,COLX
003.065 062 061 004 1255 STA D,LINX
003.070 076 014 1256 MVI A,FF
003.072 303 075 003 1257 JMP DB0
1258
003.075 1259 DB05 EQU *
1260
003.075 376 040 1261 DB0 CPI ' '
003.077 332 142 003 1262 JC DB09 NON-PRINTING CHARACTER
003.102 376 177 1263 CPI RUBOUT
003.104 322 142 003 1264 JNC DB09 NON-PRINTING CHARACTER
1265
003.107 365 1266 PUSH PSW
003.110 345 1267 PUSH H
1268
003.111 072 057 004 1269 LDA D,WID
003.114 247 1270 ANA A
003.115 312 131 003 1271 JZ DB08 DON'T WRAP AT ALL
1272
003.120 041 062 004 1273 LXI H,D,COLX
003.123 276 1274 CMP M
003.124 076 012 1275 MVI A,NL
003.126 334 355 002 1276 CC DBOUT OUTPUT NEWLINE IF WIDTH < INDEX
1277
003.131 041 062 004 1278 DB08 LXI H,D,COLX
003.134 064 1279 INR M
1280
003.135 315 157 003 1281 CALL DB010 CHECK FOR PAGE WRAP (ONLY IF NON-PRINTING)

```

WRITE - WRITE TO DEVICE

DBOUT

18:34:04 16-MAY-80

```
1282
003.140 341 1283 POP H
003.141 361 1284 POP PSW
1285
003.142 346 177 1286 DB09 ANI 177Q MAP OUT HIGH ORDER BIT, POSSIBLY SET FOR QUOTE
003.144 315 242 003 1287 CALL OUTCHAR
1288
003.147 072 065 004 1289 LDA D.BURC
003.152 075 1290 DCR A
003.153 062 065 004 1291 STA D.BURC DECREMENT BURST COUNT (HERE FOR ALL CHARS.!)
1292
003.156 311 1293 RET
1294
003.157 345 1295 DB010 PUSH H
003.160 072 060 004 1296 LDA D.LNPG
003.163 247 1297 ANA A
003.164 312 200 003 1298 JZ DB011 DON'T DO ANY FORM-FEED STUFF
003.167 041 061 004 1299 LXI H,D.LINX
003.172 276 1300 CMP M
003.173 076 014 1301 MVI A,FF
003.175 334 355 002 1302 CC DBOUT OUTPUT FORM-FEED IF LINES/PAGE < INDEX
003.200 341 1303 DB011 POP H
003.201 311 1304 RET
```

SUBROUTINES

CFA

18:34:04 16-MAY-80

```

1308 **      CFA      - CHECK FOR ABORT
1309 *
1310 *      CHECK FOR AN ABORT CHARACTER STRUCK UPON THE CONSOLE
1311 *
1312 *      ENTRY:  NONE
1313 *
1314 *      EXIT:   (PSW) = 'Z' SET IF ABORT NOT STRUCK
1315 *              'Z' CLEAR IF ABORT STRUCK
1316 *
1317 *      USES:   (PSW)
1318 *
1319 *
003.202 072 334 040 1320 CFA      LDA      S.CAADR+1
003.205 247          1321      ANA      A          SET/RESET THE ZERO FLAG
003.206 311          1322      RET

1324 **      WAIT      - WAIT FOR HANDSHAKE
1325 *
1326 *      DUMMY WAIT FOR HANDSHAKE ROUTINE.
1327 *
1328 *
003.207          1329 WAIT      EQU      *
003.207 311      1330      RET
003.210          1331      XTEXT    DVDIO

1333X **      INCHAR - INPUT CHARACTER
1334X *
1335X *      INPUT CHARACTER FROM SPECIFIED DEVICE
1336X *
1337X *      ENTRY  NONE
1338X *
1339X *      EXIT   (PSW) = 'Z' CLEAR IF THERE IS A CHARACTER
1340X *              (A) = CHARACTER
1341X *              = 'Z' SET IF THERE IS NOT A CHARACTER
1342X *
1343X *      USES   (PSW)
1344X *
1345X *
003.210          1346X INCHAR EQU      *
003.210 345      1347X      PUSH    H
003.211 072 055 004 1348X      LDA      D.PORT
003.214 147      1349X      MOV     H,A
1350X
1351X *      CHECK FOR DATA
1352X
000.000          1353X      IF      H&410
1354X
003.215 056 005      1355X      MVI     L,UR.LSR
003.217 315 020 004 1356X      CALL    IN
003.222 346 001      1357X      ANI     UC.DR          'Z' SET IF THERE IS DATA

```

```
003.224 312 237 003 1358X      JZ      INC1      NO DATA
003.227 056 000      1359X      MVI     L,UR,RBR
003.231 315 020 004 1360X      CALL    IN
003.234 303 240 003 1361X      JMP     INC2
                  1362X
                  1363X      ELSE
                  1364X
                  1365X      MVI     L,USR
                  1366X      CALL    IN
                  1367X      ANI     USR,RXR      'Z' SET IF THERE IS NO DATA
                  1368X      JZ      INC1      NO DATA
                  1369X      MVI     L,UDR
                  1370X      CALL    IN
                  1371X      ANA     A
                  1372X      JMP     INC2      IGNORE NULL CHARACTERS
                  1373X
                  1374X      ENDIF
003.237 067      1375X
                  1376X INC1      STC
                  1377X
003.240 341      1378X INC2      POP     H
003.241 311      1379X      RET

1381X **      OUTCHAR - OUTPUT CHARACTER
1382X *
1383X *      OUTPUT CHARACTER TO SPECIFIED DEVICE
1384X *
1385X *      ENTRY (A) = CHARACTER
1386X *
1387X *      EXIT NONE
1388X *
1389X *      USES (PSW)
1390X *
1391X
003.242      1392X OUTCHAR EQU *
003.242 345      1393X      PUSH    H
                  1394X
003.243 365      1395X      PUSH    PSW
003.244 072 055 004 1396X      LDA     D,PORT
003.247 147      1397X      MOV     H,A
                  1398X
000.000      1399X      IF      H&410
                  1400X
003.250 056 005      1401X      MVI     L,UR,LSR
003.252 315 207 003 1402X      CALL    WAIT      WAIT FOR THE HAND-SHAKE!/79.11.0C/
003.255 072 334 040 1403X OUTCO      LDA     S,CAADR+1
003.260 247      1404X      ANA     A
003.261 302 305 003 1405X      JNZ     OUTC1      IF CTL-Z,-A,-B,-C HIT
003.264 315 020 004 1406X      CALL    IN
003.267 346 040      1407X      ANI     UC,THE
003.271 312 255 003 1408X      JZ      OUTCO      IF NOT READY FOR TRANSMIT
003.274 361      1409X      POP     PSW
003.275 056 000      1410X      MVI     L,UR,THR
```

```
003.277 315 030 004 1411X CALL OUT
003.302 303.306.003 1412X JMP OUTC2
1413X
1414X ELSE
1415X
1416X MVI L,USR
1417X CALL WAIT WAIT FOR THE HAND-SHAKE /79.11.GC/
1418X OUTC0 LDA S,CAADR+1
1419X ANA A
1420X JNZ OUTC1 IF CTL-ZA-A,-BA-C HIT
1421X CALL IN
1422X ANI USR,IXR
1423X JZ OUTC0 IF NOT READY FOR TRANSMIT
1424X POP PSW
1425X MVI L,UDR
1426X CALL OUT
1427X JMP OUTC2
1428X
1429X ENDIF
1430X
003.305 361 1431X OUTC1 POP PSW
1432X
003.306 341 1433X OUTC2 POP H
003.307 311 1434X RET
000.000 1435X IF H84IO
```

```
1437X ** I8250 - INITIALIZE 8250
1438X *
1439X * INITIALIZE AN 8250 PORT, STOLEN AS CAP FROM CONSL. DRIVER.
1440X *
1441X * ENTRY (A) = PORT ADDRESS
1442X * (HL)[0-14] = NEW BAUD RATE
1443X * (HL)[15] = 1 IF TWO STOP BITS
1444X *
1445X * EXIT NONE
1446X *
1447X * USES (A)
1448X *
1449X *
```

```
003.310 1450X I8250 EQU *
003.310 325 1451X PUSH D
1452X
003.311 353 1453X XCHG
003.312 147 1454X MOV H,A
003.313 056 001 1455X MVI L,UR,IER /79.02.GC/
003.315 257 1456X XRA A /79.02.GC/
003.316 315 030 004 1457X CALL OUT /79.02.GC/
003.321 056 004 1458X MVI L,UR,MCR /79.01.GC/
003.323 076 020 1459X MVI A,UC,LOD /79.01.GC/
003.325 315 030 004 1460X CALL OUT SET LOOP-BACK /79.01.GC/
003.330 056 003 1461X MVI L,UR,LCR
003.332 076 200 1462X MVI A,UC,DLA
003.334 315 030 004 1463X CALL OUT
```


SUBROUTINES

I8250

18:34:08 16-MAY-80

```

003.337 056 000 1464X MVI L,UR.DLL
003.341 173 1465X MOV A,E
003.342 315 030 004 1466X CALL OUT
003.345 056 001 1467X MVI L,UR.DLM
003.347 172 1468X MOV A,D
003.350 346 177 1469X ANI 1770
003.352 315 030 004 1470X CALL OUT
003.355 056 003 1471X MVI L,UR.LCR
003.357 172 1472X MOV A,D
003.360 007 1473X RLC
003.361 007 1474X RLC
003.362 007 1475X RLC
000.000 1476X ERRNZ UC.2SB-4
003.363 346 004 1477X ANI UC.2SB
003.365 366 003 1478X ORI UC.8BW 8 BIT WORDS
003.367 315 030 004 1479X CALL OUT
003.372 056 000 1480X MVI L,UR.RBR
003.374 315 020 004 1481X CALL IN REMOVE GARBAGE
003.377 076 156 1482X MVI A,AC.DLY /79.01.GC/
004.001 315 053 000 1483X CALL .DLY /79.01.GC/
004.004 056 004 1484X MVI L,UR.MCR /79.01.GC/
004.006 315 020 004 1485X CALL IN /79.01.GC/
004.011 346 357 1486X ANI 3770-UC.L00 /79.01.GC/
004.013 315 030 004 1487X CALL OUT TURN OFF LOOP-BACK /79.01.GC/
1488X
004.016 321 1489X POP D
004.017 311 1490X RET
1491X ELSE
1492X I8251 SPACE 4,10
1493X ** I8251 - INITIALIZE 8251
1494X *
1495X * INITIALIZE AN 8251 PORT
1496X *
1497X * ENTRY (A) = PORT ADDRESS
1498X * (HL)[15] = 1 IF TWO STOP BITS
1499X *
1500X * EXIT NONE
1501X *
1502X * USES ALL
1503X *
1504X
1505X I8251 EQU *
1506X XCHG
1507X MOV H,A
1508X MVI L,USR
1509X MOV A,D
1510X ANI 2000 (A) = 2000 IF TWO STOP BITS
1511X ERRNZ 2000+UMI.1B-UMI.2B
1512X ORI UMI.1B+UMI.L8+UMI.16X
1513X STA I8251.B
1514X LXI B,I8251.A
1515X I8251.1 LDAX B
1516X CPI #3770
1517X JZ I8251.2
1518X CALL OUT
1519X INX B

```

SUBROUTINES

I8250

18134108 16-MAY-80

```

1520X      JMP      I8251.1
1521X I8251.2 MVI     A,UCI,ER+UCI,TE+UCI,RE
1522X      CALL     OUT
1523X      MVI      L,UDR
1524X      CALL     IN
1525X      RET
1526X I8251.A DB      0,0,0,0,0,0
1527X      DB      UCI,IR
1528X I8251.B DB      0
1529X      DB      3770
1530X      ENDIF

```

CONFIGURATION BYTE

```

1532X **      IN - INPUT
1533X *
1534X *      INPUT BYTE FROM SPECIFIED PORT
1535X *
1536X *      ENTRY (H) = PORT ADDRESS
1537X *      (L) = OFFSET
1538X *
1539X *      EXIT (A) = BYTE READ
1540X *
1541X *      USES (PSW)
1542X *
1543X *
004.020      1544X IN      EQU *
004.020 174      1545X MOV     A,H
004.021 205      1546X ADD     L
004.022 062 026 004 1547X STA     IN,ADD
004.025 333 000      1548X IN      *-*
004.026          1549X IN,ADD EQU  *-1
004.027 311      1550X RET

```

```

1552X **      OUT - OUTPUT
1553X *
1554X *      OUTPUT BYTE TO SPECIFIED PORT
1555X *
1556X *      ENTRY (A) = BYTE TO BE WRITTEN
1557X *      (H) = PORT ADDRESS
1558X *      (L) = OFFSET
1559X *
1560X *      EXIT NONE
1561X *
1562X *      USES NONE
1563X *
1564X *
004.030      1565X OUT     EQU *
004.030 365      1566X PUSH    PSW
004.031 174      1567X MOV     A,H
004.032 205      1568X ADD     L
004.033 062 040 004 1569X STA     OUT,ADD

```

SUBROUTINES

OUT

18:34:09 16-MAY-80

```
004.036 361      1570X      POP      PSW
004.037 323 000  1571X      OUT      *-*
004.040          1572X OUT.ADD EQU      *-1
004.041 311      1573X      RET
```

```
1575 **      UAS      - UNIT ASSIGNED?
1576 *
1577 *      CHECK TO SEE IF THE UNIT IS ASSIGNED
1578 *
1579 *      ENTRY NONE
1580 *
1581 *      EXIT      (PSW) = 'Z' CLEAR IF UNIT ASSIGNED
1582 *      'Z' SET IF UNIT NOT ASSIGNED
1583 *
1584 *      USES      (PSW)
1585 *
```

```
1586
004.042 072 050 004 1587 UAS      LDA      D.ASGN
004.045 346 200  1588      ANI      10000000B      D.AS.[7]=1 => ASSIGNED
004.047 311      1589      RET
```

004.050 1592 XTEXT TBRA

1594X ** \$TBRA - BRANCH RELATIVE THROUGH TABLE.
1595X *
1596X * \$TBRA USES THE SUPPLIED INDEX TO SELECT A BYTE FROM THE
1597X * JUMP TABLE. THE CONTENTS OF THIS BYTE ARE ADDED TO THE
1598X * ADDRESS OF THE BYTE, YIELDING THE PROCESSOR ADDRESS.
1599X *
1600X * CALL \$TBRA
1601X * DB LAB1-* INDEX = 0 FOR LAB1
1602X * DB LAB2-* INDEX = 1 FOR LAB2
1603X * DB LABN-* INDEX = N-1 FOR LABN
1604X *
1605X * ENTRY (A) = INDEX
1606X * (RET) = TABLE FWA
1607X * EXIT TO COMPUTED ADDRESS
1608X * USES F,H,L
1609X
1610X
031.076 1611X \$TBRA EQU 31076A IN H17 ROM
004.050 1612 XTEXT TYPTX

1614X ** \$TYPTX - TYPE TEXT.
1615X *
1616X * \$TYPTX IS CALLED TO TYPE A BLOCK OF TEXT ON THE SYSTEM CONSOLE.
1617X *
1618X * IMBEDDED ZERO BYTES INDICATE A CARRIAGE RETURN LINE FEED,
1619X * A BYTE WITH THE 200Q BIT SET IS THE LAST BYTE IN THE MESSAGE.
1620X *
1621X * ENTRY (RET) = TEXT
1622X * EXIT TO (RET+LENGTH)
1623X * USES A,F
1624X
1625X

031.136 1626X \$TYPTX EQU 31136A IN H17 ROM

031.144 1627X
1628X \$TYPTX EQU 31144A IN H17 ROM

1630 *** TABLE OF DEVICE AND UNIT VARIABLES
1631 *
1632

004.050 000 1633 D.UNIT DB 0 [6-0] ::= UNIT NUMBER
1634

004.050 1635 D.ASGN EQU D.UNIT [7] ::= UNIT ASSIGNED FLAG
1636

004.051 001 1637 D.FLAG DB DFLT.FG FLAGS
1638

004.052 140 000 1639 D.BAUD DW DFLT.BD BAUD RATE, [15] ::= TWO STOP BIT FLAG
1640

004.054 000 1641 D.WAIT DB 0 WAIT FOR I/O FLAG
1642

TABLE OF VARIABLES

18:34:15 16-MAY-80

004.055	340	1643	D.PORT	DB	DFLT.PN	PORT NUMBER
		1644				
004.056	006	1645	D.LPI	DB	DFLT.LI	LINES/INCH
		1646				
004.057	120	1647	D.WID	DB	DFLT.WD	CHARACTERS/LINE
		1648				
004.060	074	1649	D.LNPG	DB	DFLT.LP	LINES/PAGE
		1650				
004.061	000	1651	D.LINX	DB	0	LINE INDEX
		1652				
004.062	000	1653	D.COLX	DB	0	COLUMN INDEX
		1654				
004.063	000	1655	D.LWE	DB	0	LAST CHARACTER WAS AN ESCAPE IF != 0
		1656				
004.064	000	1657	D.NOC	DB	0	NEED ONE MORE ESC. CHAR. IF != 0
		1658				
004.065	000	1659	D.BURC	DB	0	BURST COUNT

TABLE OF VARIABLES

18:34:15 16-MAY-80

		1661	LON	G
004.066	055.000.062	1662	END	
	000 065 000			
	130.000.170			
	001 205 001			
	224.001.236			
	001 252 001			
	264.001.300			
	001 313 001			
	325.001.340			
	001 367 001			
	373.001.003			
	002 033 002			
	040.002.047			
	002 054 002			
	060.002.063			
	002 070 002			
	073.002.076			
	002 101 002			
	104.002.114			
	002 121 002			
	126.002.132			
	002 141 002			
	146.002.151			
	002 161 002			
	166.002.200			
	002 203 002			
	206.002.211			
	002 214 002			
	220.002.225			
	002 231 002			
	235.002.240			
	002 244 002			
	253.002.260			
	002 267 002			
	273.002.277			
	002 303 002			
	310.002.315			
	002 324 002			
	327.002.333			
	002 336 002			
	345.002.352			
	002 360 002			
	365.002.372			
	002 377 002			
	004.003.007			
	003 020 003			
	023.003.030			
	003 035 003			
	040.003.044			
	003 051 003			
	056.003.063			
	003 066 003			
	073.003.100			
	003 105 003			
	112.003.116			

TABLE OF VARIABLES

18:34:15 16-MAY-80

003 121 003
127 003 132
003 136 003
145 003 150
003 154 003
161 003 165
003 170 003
176 003 212
003 220 003
225 003 232
003 235 003
245 003 253
003 262 003
265 003 272
003 300 003
303 003 317
003 326 003
335 003 343
003 353 003
370 003 375
003 007 004
014 004 023
004 034 004
043 004 000
000

ASSEMBLY COMPLETE

1662 STATEMENTS

0 ERRORS DETECTED

11748 BYTES FREE

CROSS-REFERENCE TABLE

.\$CNA	042207	590L	790
.\$DCS	042204	588L	
.\$FST	042212	592L	
.\$LBD	042223	598L	795
.\$PBF	042231	602L	763
.\$PBV	042234	604L	773
.\$SNA	042201	586L	742
.\$SOP	042226	600L	740
.\$TBL	042215	594L	
.\$TBRA	031076	927	1611E
.\$TYPTX	031136	817	1626E
.\$TYPTX	031144	1628E	
.\$WTBL	042220	596L	
.	001377	904S	905 906
.\$ABUSS	040024	569E	
.\$ALARM	002136	542E	
.\$ALED	040013	567E	
.\$CHFLG	000060	475L	
.\$CLEAR	000055	472L	
.\$CLEARA	000056	473L	
.\$CLOSE	000046	465L	
.\$CLRCD	000007	449L	
.\$CONSL	000006	448L	
.\$CRC	002347	550E	
.\$CRCSUM	040027	570E	
.\$CTC	002172	544E	
.\$CTLC	000041	460L	
.\$CTLFLG	040011	566E	
.\$DECODE	000053	470L	
.\$DELET	000050	467L	
.\$DISMT	000061	476L	
.\$DLED	040021	568E	
.\$DLY	000053	539E	1483
.\$DMMS	000203	487L	
.\$DMOUN	000201	485L	
.\$DOD	003122	553E	
.\$DODA	003356	555E	
.\$DSPMOD	040007	564E	
.\$DSPROT	040006	563E	
.\$DUMP	001374	541E	
.\$ERROR	000057	474L	
.\$EXIT	000000	442L	
.\$HORN	002140	543E	
.\$IDENT	000000	538E	
.\$IDWRK	040002	561E	
.\$LINK	000040	459L	
.\$LOAD	001267	540E	
.\$LOADD	000062	477L	
.\$LOADO	000010	450L	
.\$MFLAG	040010	565E	
.\$MONMS	000202	486L	
.\$MOUNT	000200	484L	
.\$NAME	000054	471L	
.\$OPENC	000045	464L	
.\$OPENR	000042	461L	
.\$OPENU	000044	463L	
.\$OPENW	000043	462L	
.\$PCHL	002264	546E	

CROSS REFERENCE TABLE

.POSIT	000047	466L			
.PRINT	000003	445L			
.RCK	003260	554E			
.READ	000004	446L			
.REGI	040005	562E			
.REGPTR	040035	573E			
.RENAM	000051	468L			
.RESET	000204	488L			
.RNB	002331	549E			
.RNP	002325	548E			
.SCIN	000001	443L			
.SCOUT	000002	444L			
.SETTP	000052	469L			
.SRS	002265	547E			
.START	040000	560E			
.SYSRES	000012	452L			
.TICCNT	040033	572E			
.TPERR	002205	545E			
.TPERRX	040031	571E			
.UIVEC	040037	574E			
.VERS	000011	451L			
.WNB	003024	552E			
.WNP	003017	551E			
.WRITE	000005	447L			
ABORT	002032	935	972E	1102	
AC.DLY	000156	612E	1482		
ACK	000006	713E	1197		
AIO.CGN	041047	196L			
AIO.CHA	041116	211L			
AIO.CNT	041111	207L			
AIO.CSI	041050	197L			
AIO.DDA	041041	192E			
AIO.DES	041055	201L			
AIO.DEV	041057	202L			
AIO.DIR	041062	205L			
AIO.DTA	041053	200L			
AIO.EOF	041113	209L			
AIO.EOM	041112	208L			
AIO.FLG	041043	193L			
AIO.GRT	041044	194L			
AIO.LGN	041051	198L			
AIO.LSI	041052	199L			
AIO.SPG	041046	195L			
AIO.TFP	041114	210L			
AIO.UNI	041061	203L			
AIO.VEC	041040	191L			
BAUD	000107	789L	893		
BAUDI	000000	879	892E		
BELL	000007	281E			
BKSP	000010	283E			
BOOT.P	000001	171E			
BURST	000040	714E	1017	1177	1200
C.STX	000002	285E			
C.SYN	000026	284E			
CB.CLI	000100	508E	523		
CB.MTL	000040	507E			
CB.SPK	000200	509E			
CB.SSI	000020	506E			

CROSS REFERENCE TABLE

CDB.H84	000001	114E					
CDB.H85	000000	113E					
CES	002230	1112	1131L				
CES1	002256	1137	1146L				
CES2	002263	1133	1150L				
CES3	002272	1152	1154L				
CFA	003202	1101	1190	1320L			
CHF	002302	1117	1172L				
CHP1	002324	1190L	1194	1198			
CLOSE	002131	934	973	1055E			
CO.FLG	000001	263E					
CR	000015	277E	1036	1218	1222	1243	
CS.FLG	000200	264E					
CSL.CHR	000001	241E					
CSL.ECH	000200	239E					
CSL.WRP	000002	240E					
CTLA	000001	292E					
CTLB	000002	293E					
CTLC	000003	294E					
CTLD	000004	295E					
CTLO	000017	296E					
CTLP	000020	297E					
CTLQ	000021	298E					
CTLS	000023	299E					
CTLZ	000032	300E					
CTP.2SB	000010	249E					
CTP.BKM	000002	250E					
CTP.BKS	000200	246E					
CTP.MLI	000040	247E					
CTP.MLO	000020	248E					
CTP.TAB	000001	251E					
D.ASGN	004050	1009	1011	1061	1063	1587	1635E
D.BAUD	004052	800	1023	1639L			
D.BURC	004065	1018	1172	1201	1289	1291	1659L
D.COLX	004062	1221	1230	1254	1273	1278	1653L
D.CON	040110	87L					
D.FLAG	004051	855	859	1065	1637L		
D.LINX	004061	1035	1245	1247	1255	1299	1651L
D.LNPG	004060	871	1296	1649L			
D.LPI	004056	1645L					
D.LWE	004063	1015	1131	1143	1156	1183	1655L
D.NOC	004064	1014	1135	1147	1154	1179	1657L
D.PORT	004055	874	1022	1026	1348	1396	1643L
D.RAM	040240	90L					
D.UNIT	004050	1633L	1635				
D.VEC	040130	89L					
D.WAIT	004054	1641L					
D.WID	004057	877	1269	1647L			
DBD1	002022	925	939L				
DBDVD	002000	922E					
DBO	003075	1223	1249	1257	1261L		
DBO1	002374	1219	1225L				
DBO10	003157	1281	1295L				
DBO11	003200	1298	1303L				
DBO2	003006	1230L	1237				
DBO3	003025	1226	1240L				
DBO4	003053	1241	1251L				
DBO5	003075	1252	1259E				

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CROSS-REFERENCE TABLE

DV.EL	000000	326E				
DV.NU	000001	327E				
DVD.CAP	000007	369L				
DVD.DVD	000006	368L				
DVD.ENT	002000	377E	906	923		
DVD.MNU	000011	371L				
DVD.MUM	000010	370L				
DVD.SET	000022	373L				
DVD.STE	000053	375E	681	732		
DVD.UFL	000012	372L				
DVDFLV	000307	364E	673	679		
EC.CNA	000004	387L				
EC.DDA	000027	406L				
EC.DIF	000017	398L				
EC.DIW	000035	412L				
EC.DNI	000045	420L				
EC.DNR	000046	421L				
EC.DNS	000005	388L	957			
EC.DSC	000047	422L				
EC.EOF	000001	384L				
EC.EOM	000002	385L				
EC.FAO	000031	408L				
EC.FAP	000026	405L				
EC.FL	000030	407L				
EC.FNF	000014	395L				
EC.FND	000011	392L				
EC.FNR	000034	411L				
EC.FOD	000043	418L				
EC.FUC	000013	394L				
EC.ICN	000016	397L				
EC.IDN	000006	389L				
EC.IFC	000020	399L				
EC.IFN	000007	390L				
EC.ILC	000003	386L				
EC.ILD	000040	415L	745			
EC.ILR	000012	393L	939			
EC.ILV	000037	414L	791	796		
EC.IOI	000052	425L				
EC.IS	000032	409L				
EC.NCV	000050	423L				
EC.NEM	000021	400L				
EC.NOS	000051	424L				
EC.NPM	000044	419L				
EC.NRD	000010	391L				
EC.NVM	000042	417L				
EC.OTL	000053	426L				
EC.RF	000022	401L				
EC.UNA	000036	413L	1003	1057	1093	
EC.UND	000015	396L				
EC.UUN	000033	410L	749			
EC.VPM	000041	416L				
EC.WF	000023	402L				
EC.WP	000025	404L				
EC.WPV	000024	403L				
ENL	000212	290E	829			
ESC	000033	288E	1140			
ETX	000003	712E	1187			
F.FORM	000001	696E	704	854	854	858 1066

[illegible]

CROSS REFERENCE TABLE

RUBOUT	000177	282E	1263				
S.BAUD	040344	115L					
S.BOOTF	041034	170L					
S.CAADR	040333	270L	1320	1403			
S.CACC	041006	154L					
S.CCTAB	040335	271L					
S.CDB	040343	112L					
S.CFWA	040352	122L					
S.CODE	041007	155L					
S.CONFL	040332	268L					
S.CONTY	040327	255L					
S.CONWI	040331	261L					
S.CSLMD	040326	244L	254	257	260	267	
S.CUSOR	040330	258L					
S.DATC	040310	226L					
S.DATE	040277	225L					
S.DCS	041033	168L					
S.DDDTA	040366	133L					
S.DDGRP	040364	130L					
S.DDLDA	040360	128L					
S.DDLEN	040362	129L					
S.DDOPC	040370	134L					
S.DFWA	040354	123L					
S.DIREA	041016	162L					
S.DLINK	040346	120L					
S.FASER	041013	161L					
S.FCI	041021	163L					
S.GRT0	024000	78E					
S.GRT1	025000	79E					
S.GRT2	026000	80E					
S.GUP	041027	165L					
S.HIMEM	040316	228L					
S.INT	040343	92L	108				
S.JUMPS	041010	159L					
S.MOUNT	041032	167L					
S.OFWA	040350	121L					
S.OMAX	040324	234L					
S.OSN	041004	150L					
S.OVLE	041000	147L					
S.OVLFL	040371	143L					
S.OVLS	040376	146L					
S.OVSTK	041035	175L					
S.RFWA	040356	124L					
S.SCI	041024	164L					
S.SCR	041120	213L					
S.SDD	041010	160L					
S.SDVR	041146	94L	96				
S.SSN	041002	149L					
S.SYSM	040320	230L					
S.TIME	040312	227L					
S.UCSF	040372	144L					
S.UCSL	040374	145L					
S.USRH	040322	232L					
S.VAL	040277	91L	223				
SC.ACE	000350	611E					
SET1	000103	734	749L				
SETNTR	000053	731E					
STACK	042200	98E					

CROSS REFERENCE TABLE

STACKL	001032	96E			
SYDD	040130	88E			
SYSCALL	000377	435E			
TAB	000011	287E	1225		
UAS	004042	1002	1056	1092	1587L
UC.2SB	000004	637E	1476	1477	
UC.5BW	000000	633E			
UC.6BW	000001	634E			
UC.7BW	000002	635E			
UC.8BW	000003	636E	1478		
UC.BI	000020	656E			
UC.CTS	000020	665E			
UC.DCS	000001	661E			
UC.DDR	000002	662E			
UC.DLA	000200	642E	1462		
UC.DR	000001	652E	1357		
UC.DRL	000010	664E			
UC.DSR	000040	666E			
UC.DTR	000001	645E	1029		
UC.EDA	000001	623E			
UC.EPS	000020	639E			
UC.FE	000010	655E			
UC.IID	000006	630E			
UC.IIP	000001	629E			
UC.LDD	000020	649E	1459	1486	
UC.MSI	000010	626E			
UC.OR	000002	653E			
UC.OU1	000004	647E			
UC.OU2	000010	648E	1029		
UC.FE	000004	654E			
UC.PEN	000010	638E			
UC.RI	000100	667E			
UC.RLS	000200	668E			
UC.RSI	000004	625E			
UC.RTS	000002	646E	1029		
UC.SB	000100	641E			
UC.SKP	000040	640E			
UC.TER	000004	663E			
UC.THE	000040	657E	1407		
UC.TRE	000002	624E			
UC.TSE	000100	658E			
UNT.DIS	000005	357L			
UNT.FLG	000000	354L			
UNT.GRT	000001	355L			
UNT.GTS	000003	356L			
UNT.SIZ	000007	359E			
UO.CLK	000001	525E			
UO.DDU	000002	524E			
UO.HLT	000200	522E			
UO.NFR	000100	523E			
UR.DLL	000000	618E	1464		
UR.DLM	000001	620E	1467		
UR.IER	000001	622E	1455		
UR.IIR	000002	628E			
UR.LCR	000003	632E	1461	1471	
UR.LSR	000005	651E	1355	1401	
UR.MCR	000004	644E	1028	1458	1484
UR.MSR	000006	660E			

CROSS-REFERENCE TABLE

UR.RBR	000000	614E	1359	1480
UR.THR	000000	616E	1410	
USERFWA	042200	99E	584	
VAL	042234	773E	902	
VALI	000003	870	873	876 901E
VERS	000026	433E		
WAIT	003207	1329E	1402	
WRI1	002174	1097L	1105	
WRI2	002213	1104	1112L	
WRITE	002165	929	1091E	

25704 BYTES FREE