

OPERATION

4.1 GENERAL

Before operating the DB-1 with MPEXC*, you must perform the following Program Modifications. Call up the program named and change only the line numbers listed. The name of new commands are listed and explained in this section.

4.2 PROGRAM MODIFICATIONS

Change the following program line numbers:

PROGRAM NAME	LINE NUMBER	CHANGE TO
BEXEC* V5.0	1185 1189 11135 40345 40355	POKE 62463,0 : IF (LVL = 5) AND (QA\$ > "F") THEN 7000 IF LV = 5 THEN ID\$ = "Multiprocessor User" IF LV = 5 THEN ID\$ = ID\$ + STR\$ (PEEK (63234) AND 15)
BEXEC* V6.7	1185 1186 10635 41545 41550 41555	POKE 62463,0 : IF (LVL = 5) AND (OA\$ > "F") THEN 7500 IF LV = 5 THEN ID\$ = "Multiprocessor User" IF LVL > 1 AND LVL < 5 THEN ID\$ = ID\$ + STR\$ (PEEK (55381)) IF LV = 5 THEN ID\$ = ID\$ + STR\$ (PEEK (63234) AND 15)
DIR V1.53 DIR V1.7	250 1425 250 1425 1670	IF (LVL=1 OR LVL=3 OR LVL=5) AND DV\$>"F" GOTO 280 FLAG 54 IF (LVL=1 OR LVL=3 OR LVL=5) AND DV\$>"F" GOTO 280 FLAG 54 IF LVL=1 OR LVL=3 OR (LVL=4 AND SAME) OR LV=5 THEN GOSUB 2020: RETURN
CREATE V1.66 & V1.72	290 475 476 2415	IF (LVL=1 OR LVL=3 OR LVL=5) AND U\$>"F" GOTO 320 IF LV=5 THEN TM=WAIT FOR SN,5 : IF TM=>0 GOTO 530 IF LV=5 GOTO 490 FLAG 54 DELETE LINES 40, 130, 171, 180, 1980, 3020, 3490, 50020
RENAME V1.53	190 305 306 1435	IF (LVL=1 OR LVL=3 OR LVL=5) AND U\$>"F" GOTO 220 IF LV=5 THEN TM=WAIT FOR SN,2 : IF TM=>0 GOTO 370 IF LV=5 GOTO 320 FLAG 54
COPYFI V1.52 COPYFI V2.02	890 1505 12040 13045	IF (LVL=1 OR LVL=3 OR LVL=5) AND UN\$>"F" GOTO 920 FLAG 54 IF (LVL=1 OR LVL=3 OR LVL=5) AND UN\$>"F" GOTO 12070 FLAG 54

PROGRAM NAME	LINE NUMBER	CHANGE TO
COPIER	180	LV = PEEK(16317) : REM get current level (1,2,3,4,5)
V1.52	195	IF LV=5 THEN GOSUB 3120 : REM Setup Level 5
&	200	IF LVL<3 OR LVL=5 THEN GOTO 240 : REM *AC
V1.55	540	IF LV>2 AND LV<>5 GOTO 600: REM *NET
	640	IF LV>2 AND LV<>5 GOTO 1400: REM *NET
	700	IF (LVL<2 OR LVL=5) AND DE>5 THEN 660
	1410	IF LV>2 AND LV<>5 AND QA\$="B" THEN PRINT CHR\$(7) : GOTO 530
	1520	IF FR\$>"F" AND (LV=1 OR LV=3 OR LV=5) THEN 1470
	1540	IF LV>2 AND LV<>5 AND ST=0 THEN 1470
	1840	IF TU\$>"F" AND (LV=1 OR LV=3 OR LV=5) THEN 1790
	1860	IF LVL>2 AND LVL<>5 AND TU\$>"D" AND ST=0 THEN 1790
	2100	IF LV=5 THEN POKE 62420,234 :GOTO 2150 :REM L5 head down
	2105	IF LV>2 THEN POKE 56443,234: GOTO 2150:REM L3 head down
	2320	RW=0: IF LV=5 THEN ER=USR#(RW): GOTO 2325
	2322	ER=USR(RW)
	2325	IF ER<>0 THEN GOTO 2820
	2445	IF LV=5 GOTO 2490
	2490	RW=1: IF LV=5 THEN ER=USR#(RW): GOTO 2495
	2492	ER=USR(RW)
	2495	IF ER<>0 THEN GOTO 2820
	2520	IF LV=5 AND Y=EN-1 THEN POKE 62420,76 :GOTO 2550 :REM L 5 head up
	2522	IF LV=5 GOTO 2550
	2525	IF LV=>3 THEN POKE 56443,32 : GOTO 2550 : REM L3 head up
	2705	FLAG 54
	2855	IF LV=5 THEN POKE 62420,76: GOTO 2880 : REM L5 UNLOAD
	3060	IF LV=5 THEN WF = (PEEK #(49152) AND 032): GOTO 3070
	3065	WF = (PEEK (49152) AND 032)
	3120	REM Level 5 setup
	3130	DATA 24865,152,8,76,95,48
	3140	DATA 24685,144,3,254,1,1,76,33,97
	3150	DATA 12385,76,247,51
	3160	DATA 65535
	3170	RESTORE
	3180	READ Q: IF Q=65535 THEN RETURN
	3190	IF Q>255 THEN P=Q: GOTO 3180
	3200	POKE P,Q: P=P+1: GOTO 3180
	3210	: DELETE LINES 50,110,170,190,220,320,350,370,400 420,450,470,491,493,500,520,620,750,760,780,1030 2980,2990,3020,3100, AND 3110

PROGRAM NAME	LINE NUMBER	CHANGE TO
FDUMP V1.42	2670 5722 5725 5726 49831	IF (LV=1 OR LV=3 OR LV=5) AND DV\$>"F" THEN GOSUB 60220: GOTO 2620 IF LV=5 AND (DV<>3 OR DV<>5 OR DV<>6 OR DV<>8) GOTO 5920 IF LV=5 THEN TM=WAIT PRINT DV,0 :IF TM>0 GOTO 5920 IF LV=5 GOTO 5790 FLAG 54
FPRINT V1.33	210 1165	IF (LV=1 OR LV=3 OR LV=5) AND UN\$>"F" THEN PRINT CHR\$(7): GOTO 180 FLAG 54 DELETE LINES 129, 330, 420
ED V1.22	33560 50195	IF (LV=1 OR LV=3 OR LV=5 AND A\$>"F" THEN ER = 1: RETURN FLAG 54
DELETE V1.54	210 305 306 895	IF(LV=5ORLV=3ORLV=1)ANDU\$>"F"THENPRINTCHR\$(7): GOT0180 IF LV=5 THEN TM=WAIT FOR SN,5 :IF TM>0 GOTO 360 IF LV=5 GOTO 320 FLAG 54 DELETE LINES 110, 120, 140, 344, 346, 730, 1040, 1050, 1060
CRTSET V1.33	445 446 450 890	IF LV=5 THEN TM=WAIT FOR 250,2 : IF TM>0 GOTO 460 IF LV=5 GOTO 455 POKE 19632,2: WAIT FOR 250: IF PEEK (19633) <> 0 THEN 460 IF LV > 1 THEN WAIT CLEAR 250: POKE 6118,221
CRTSET V1.35	485 486 490 10130	IF LV=5 THEN TM=WAIT FOR 250,2 : IF TM>0 GOTO 530 IF LV=5 GOTO 500 POKE 19632,2: WAIT FOR 250: PEEK (19633) <> 0 THEN 530 IF LV > 1 THEN WAIT CLEAR 250: POKE 6118,221
RSEQ	322 324	LV = PEEK(16317) : REM - get current level (1,2,3,4,5) IF LV = 1 OR LV = 5 THEN 360
MMENU* V1.1	105 2120	GOSUB 40030 IF LV<>5 THEN PRINT "13) List Timeshare User(s) Currently Active

PROGRAM NAME	LINE NUMBER	CHANGE TO
	10125 10320 11149 11235	IF LVL = 1 OR LVL = 2 OR LVL = 5 THEN 6000 IF LVL < 003 OR LVL=005 THEN 6000 IF LVL < 3 OR LVL=5 THEN PRINT "Time not available.": GOTO 11170 IF LVL=5 THEN PRINT"Not in Multiprocessing mode":GOTO 6020
PACKER	320	LV = PEEK(16317) : REWM - get current level (1,2,3,4,5)
V1.52 & V1.55	405 452 454 456 1110 1115 1870 1875 1965	IF LVL = 5 GOTO 452 DU=PEEK(9832):IF DU>127 THEN DU=DU-124:IF DU>63 THEN DU=4 SN=201+DU:TM=WAIT FOR SN,5:IF TM>0 GOTO 460 PRINT"Directory is busy":GOTO 450 IF LV=5 THEN POKE 62420,234 :GOTO 1120 : REM head down POKE 16647,234 : POKE 16946,234 : REM HEAD DOWN PRINT" " :IF LV=5 THEN POKE 62420,76: GOTO 1880 POKE 16647,32:POKE 16946,32:REM unldhd FLAG 54
CHANGE V1.52	110 1032	IF PEEK(16317)<3 OR PEEK(16317)=5 GOTO 140:REM *AC chk cur lvl FLAG 54
PRTSET V1.33 & V1.34	75 76	IF PEEK(16317)<>5 GOTO 80 PRINT "Use Flag 57 under Multiprocessing" : GOTO 1440 DELETE LINES 1880,1890,2071,2100,2110,2170,2180, 2190
PRTMAP V1.12 & V1.13	95 96	IF PEEK(16317)<>5 GOTO 100 PRINT"Use FLAG 51 & FLAG 52 under Multiprocessing" :GOTO 10010
INSTAL V2.11 & V2.12	262 292 30215 30216 31575	IF (LV=1 OR LV=3 OR LV=5) AND DS\$>"F" GOTO 252 IF (LV=1 OR LV=3 OR LV=5) AND DD\$>"F" GOTO 252 IF LV=5 THEN TM=WAIT FOR SN,5 :IF TM>0 GOTO 30260 IF LV=5 GOTO 30230 FLAG 54
DSKSET V1.2 & 1.3	240	IF PEEK(16317)<3 OR PEEK(16317)=5 GOTO 260: REM *AC chk cur lvl
TIME	110	IF ID >= 003 AND ID<> 005 THEN 200
TSCD36 V3.4 & 3.7	200 205	IF PEEK(65535)=254 GOTO 7110 IF PEEK(16317)=1 THEN 250: REM Warm start R.W.9/81
TSCD23 V3.4 & 3.7	200 205	IF PEEK(65535)=254 GOTO 7110 IF PEEK(16317)=1 THEN 250: REM warm start R.W.9/81
TSCD07 V3.4 & 3.7	200 205	IF PEEK(65535)=254 GOTO 7110 IF PEEK(16317)=1 THEN 250: REM Warm start R.W.9/81

PROGRAM NAME	LINE NUMBER	CHANGE TO
SPOOL1 V1.37 & V1.40	595 723 724 856 1510 3255 3655	POKE 17510,5 : REM set-up for DV # 5 IF PEEK(11696)=0 AND PEEK(15993)>234 GOTO 800 ER\$ = "Must disable WPDRIV to enable spooling.": GOTO 50200 POKE 19632,60 : POKE 6118,226 : WAIT FOR 251 : REM sem for SPL 0 WAIT CLEAR 251 : POKE 6118,211 : REM release 'SPL 0' POKE 15868,32 : POKE 15869,L : POKE 15870,62 WAIT CLEAR 251 : POKE 6118,211 : REM release 'SPL 0'
SPOOL2 V1.36	82 255 292 357 371 372	POKE17510,5: REM set-up for DV # 5 POKE19632,60: POKE 6118,226 : WAIT FOR 251 : REM set 'SPL 0' sem IF LV>1 THEN WAIT CLEAR 251 WAIT CLEAR 251 : POKE 6118,211 : REM release 'SPL 0' FOR Q=1 TO 1000 : NEXT 0 IF LV=5 THEN POKE 62462,170: RUN"MPExC*
SPOOL C V1.39 & V1.40	1515 1516 1520 1670 6150 6170 7035 7036 7040 7070 7190 7200 7220 7230 7264 7265 7266 7270 7275 7276 7280 7290	IF LV=5 THEN TM=WAIT FOR 251,0 :IF TM>0 THEN 1550 IF LV=5 GOTO 1530 POKE 19632,0: WAIT FOR 251: IF PEEK (19633) <> 0 THEN 1550 IF LV>1 THEN WAIT CLEAR 251 IF LV>1 THEN POKE 19632,60 : WAIT FOR 251 IF LV>1 THEN WAIT CLEAR 251 IF LV=5 THEN TM=WAIT FOR 252,0 : IF TM=0 GOTO 7080 IF LV=5 GOTO 7060 POKE 19632,0 : WAIT FOR 252 WAIT CLEAR 252 : GOTO 7030 IF QS\$="2" THEN WAIT FOR 253 : W0=1 : GOTO 7270: REM restart IF QS\$="3" THEN WAIT FOR 254 : W1=1 : GOTO 7270: REM cn WAIT FOR 253 : W0=1 WAIT FOR 254 : W1=1 GOSUB 12500 IF LV=5 THEN TM=WAIT FOR 255,5 :IF TM=0 THEN T0=1 : GOTO 7264 IF LV=5 GOTO 7274 POKE19632,5: WAITFOR255: IF PEEK(19633)=0 THEN T0=1 : GOTO 7264 IF LV=5 THEN TM=WAIT FOR 252,5 :IF TM=0 THEN T1=1 :GOTO 7274 IF LV=5 GOTO 7290 POKE19632,5: WAITFOR252: IF PEEK(19633)=0 THEN T1=1: GOTO 7274 WAIT CLEAR 252

PROGRAM NAME	LINE NUMBER	CHANGE TO
	7330 7340 7350 11530 11630	WAIT CLEAR 255 IF W0=1 THEN WAIT CLEAR 253 IF W1=1 THEN WAIT CLEAR 254 IF LV>1 THEN POKE 19632,60 : WAIT FOR 251 IF LV>1 THEN WAIT CLEAR 251
SEMCHK V1.11 & V1.12	30065 30260 30262 30266 36140	IF LV=5 THEN TM=WAIT FOR SEM,0 :POKE 19633,TM :GOTO 30080 RT = (PEK(134)+256*PEEK(135))+10 IF LV=5 THEN TM=WAIT FOR SEM,0 :POKE 19633,TM :GOTO 30270 WAIT FOR SEM IF (LV=1 OR LV=3 OF LV=5) AND A\$ > "F" THEN ER = 1: RETURN
DSPOOL V1.43	55 90 305 306 320 340 345 490 865 866 870 900 955 960 970 985 990 1000 1010 1015	POKE 17510,5 : REM set-up for DV # 5 IF LV<>1 AND LV<>5 THEN 260 : REM if single user remove mac cd sem chks IF LV=5 THEN TM=WAIT FOR 251,5 :IF TM>0 GOTO 370 IF LV=5 GOTO 330 POKE 19632,5: WAIT FOR 251 : IF PEEK (19633) <> 00 THEN 360 IF LV=5 GOTO 305 GOTO 320 IF LV>1 THEN WAIT CLEAR 251 IF LV=5 THEN TM=WAIT FOR 252,5 :IF TM=0 GOTO 865 IF LV=5 THEN GOTO 880 POKE 19632,5: WAIT FOR 252 : IF PEEK (19633)=0 THEN 870 IF ER=0 THEN WAIT CLEAR 252 : GOTO 1100: REM despool complete IF LV=5 THEN TM=WAIT FOR 253,0 :POKE 19633,TM :W0=1 :GOTO 970 POKE 19632,0 : WAIT FOR 253 : W0=1 IF PEEK(19633)<>0 THEN WAIT CLEAR 253 : W0=0 IF LV=5 THEN TM=WAIT FOR 254,0 :POKE 19633,TM :W1=1 :GOTO 1000 POKE 19632,0 : WAIT FOR 254 : W1=1 IF PEEK(19633)<>0 THEN WAIT CLEAR 254 : W1=0 WAIT CLEAR 252 : REM Let spool control continue IF LV=5 THEN TM=WAIT FOR 255,5 :IF TM=0 GOTO 1015

PROGRAM NAME	LINE NUMBER	CHANGE TO
	1016	IF LV=5 THEN GOTO 1030
	1020	POKE 19632,5 : WAIT FOR 255 : IF PEEK(19633)=0 THEN 1020
	1030	WAIT CLEAR 255
	1115	IF LV=5 THEN TM=WAIT FOR 251,5 :IF TM=0 GOTO 1115
	1116	IF LV=5 GOTO 1130
	1120	POKE 19632,5 : WAIT FOR 251: IF PEEK(19633)=0 THEN 1120
	1160	IF LV>1 THEN WAIT CLEAR 251
	1445	IF LV=5 THEN TM=WAIT FOR 251,0 :IF TM=0 THEN POKE 6118,211 :RUN
	1446	IF LV=5 THEN FLAG 54 : GOTO 1480
	1460	WAIT FOR 251: IF PEEK(19633) = 0 THEN POKE 6118,211:RUN
	1470	WAIT CLEAR 251: PRINT CHR\$(13);:FOR Z=1 TO 8 :X=USR(X):NEXT Z
	1480	PRINT CHR\$(0); :IF PEEK (15006) = 3 THEN GOTO 2090
	1485	IF LV=5 GOTO 1445
	1640	IF LV=5 THEN :FLAG 52,5,0
	1645	FLAG 100 :P1=PEEK(14387) : P2=PEEK(14457) : P3=PEEK(15908)
	1680	IF LV=5 THEN FLAG 100,5 :RETURN
	1685	IF PEEK(15908)<>66 THEN FORG=1TOPEEK(15908): PRINT#PD:NEXT
WPDRIV V1.31 & V1.32	200	LV=PEEK (16317)
	1010	IF LV=5 THEN FLAG 57,0,1,6: GOTO 1120
	2132	IF LV<>5 GOTO 2140
	2134	POKE #CA,004: POKE #DA,196: POKE #CA,000: POKE #CB,000
	2136	POKE #DA,196: POKE #DB,255: POKE #CA,060: POKE #CB,060
	2138	GOTO 2220
	2332	IF LV<>5 GOTO 2340
	2334	X = 0: X = USR #(0): IF X = 0 THEN PRINT: GOTO 2520
	2336	GOTO 2360
	2625	IF LV<>5 GOTO 2700
	2630	FLAG 57,0,5,6
	2635	FLAG 57,1,5,15169
	2640	GOTO 5000
		DELETE LINES 130, 140, 540, 610, 660, 710, 730, 810, 850, 1030, 1110, 1130, 1210, 1240, 1310, 1330, 1350, 1360, 1370, 1380, 2010, 2030, 2110, 2160, 2210, 2230, 2260, 2310, 2330, 2350, 2390, 2430, 2510, 2530, 2560, 2710, 2740, 2810, 2830, 2910, 2930, 5040, 5050, 5060

4.3 The Following Software Commands are added or changed with the DB-1 software patch and program changes for BASIC:

FUNCTION	COMMAND
To set user semaphore	Wait for SM SM = 0 to 200 TM = Wait for SM,TL TM = Wait Print DV,TL
To clear user semaphore	Wait Clear SM (If user has not set semaphore a FC error will result)
The following commands are listed in the OSI operating manual. Standard commands are for local board use, global commands use common memory and peripheral's.	Wait I,J,K - standard Wait #I,J,K - global Peek (AD) - standard Peek #(AD) - global Poke AD,DT - standard Poke #AD,DT - global X = USR (X) - standard X = USR #(X) - global
Printer semaphore release	Print #DV!
XON-XOFF (May also use other protocalls limited to 10 characters and ending in HEX 00 or NULL)	
To turn function on	Poke 62400,17
To turn function off	Poke 62410,19 Poke 62400,0 Poke 62410,0
To reboot system from basic (To reboot as a single user Poke 62463,170. Address 62463 is used to pass a parameter from one system boot to another system boot on the same user)	Poke 8778,18 : Poke 8779,248 : X = USR (0)
To disable floppy head unload	Poke 62420,234
To enable floppy head unload	Poke 62420,76
To set-up printer port No. 1-16 (DV # 8 port # 1, DV # 3 port # 2, DV # 6 port # 3, and DV # 5 port # 4 are system defaults)	Flag 50,DV,PT

FUNCTION	COMMAND
To set-up auto form feed (Auto form feed is system default)	Flag 51,DV,FF FF = 0/off, type of FF not affected FF = 1/on, form feed by line feeds FF = 2/on, standard form feed
To set-up printer paging (External driver excluded)	Flag 52,DV,PS,MG PS = 0/paging off * PS = 255/paging on * PS > 0 or < 255 page size is PS MG = margin size * PS and MG not affected
Local printer status	Flag 53,DV,LC LC = 0/no local printer LC = 1/local printer
To clear all semaphores	Flag 54
To enable semaphore clear on CMD mode	Flag 55
To disable semaphore clear on CMD mode	Flag 56
Printer driver mapping (DV # 8 > CH # 1, DV # 3 > CH # 1, DV # 6 > CH # 1, and DV # 5 > CH # 4 are system default)	Flag 57,O,CH,DV CH # 1-4 is a device driver for a specific I/O board CH # 5 is a external driver
To map driver to physical board address (CH # 1 > \$CF00 (52992), CH # 2 > \$FB00 (64256), CH # 3 > \$F600 (62976), CH # 4 > \$F400 (62464), CH # 5 CTS return from sub are system defaults)	Flag 57,1,CH,AD
Conditional form feed	Flag 100 - OSI
Unconditional form feed	Flag 100,DV - DBI Flag 101 - OSI Flag 101,DV - DBI
To set operating system level	Peek (16317) multiprocessing is level 5
To release unwanted I/O device	Wait for beep (hung indicator) CNT-C FLAG 51,DV, PRINT # DV!

FUNCTION	COMMAND
PEEKS for printer paging	Printer page count (PAGCNT) DV # 8 = 62347 DV # 3 = 62348 DV # 6 = 62349 DV # 5 = 62350
	Printer page size in number of lines (PAGSZE) DV # 8 = 62351 DV # 3 = 62352 DV # 6 = 62353 DV # 5 = 62354
	Printer page margin size (PAGMRG) DV # 8 = 62390 DV # 3 = 62391 DV # 6 = 62392 DV # 5 = 62393
PEEK for board address	BA = PEEK (63234) AND 15
To disable dead man timer	POKE 63233,4 (for single user mode)

4-5. The following abbreviations are used in the software commands listed above:

ABBREVIATION	DESCRIPTION
SM	Semaphore number
PT	Port number
DV	Printer device number
PS	Page size in number of lines
MG	Margin size in number of lines
AD	Address
DT	Data
FF	Form feed status
LC	Local printer status
TM	Timer status
TL	Timer time limit
BA	DB-1 Board address
I,J,K, and X	See OSI operating manual

4.4 The Following Software Commands are added or changed with the DB-1 software patch and program changes for ASSEMBLER:

FUNCTION	COMMAND
To clear semaphore	SEMCLR \$F800 * semaphore #'s 0-200
I/O semaphore clear	IOSMCL \$F803 * semaphore #'s 201-255
Individual semaphore lock	LOCK \$F806 ** semaphore # is X-reg (0-255)
Individual semaphore unlock	UNLOCK \$F806 ** semaphore # is X-reg (0-255)
To gain access to the BUS	ARBITS \$F80C **
To release BUS control	ARBITC \$F80F **
To reboot system	START \$F812 *
For interprocessor	INXMIT \$F815 *

Inter Processor Communications

Control block pointer	\$F360 Low byte \$F361 High byte
Control block	Byte #
Xmit data add pointer	1 Low byte 2 High byte
Recv processed data add pointer	3 Low byte 4 High byte
Destinatin processor	5 If byte=\$80 go to all processors, If byte=\$00 to \$0F direct to one processor.
Length of transfer block	6 \$00 - \$FF (\$00 = 256 byte xfer)
Communications protocall	1-44 \$AA 45 from processor \$00 to \$0F 46 transfer add low 47 transfer add high 48 to processor \$80 for all processors, or processor \$00 to \$0F 49 number of bytes to transfer 50-306 DATA 256 bytes max

* ALL REGISTERS DESTROYED

** ALL REGISTERS INTACT

4-6. The following are samples of the commands listed above:

- a. Multiprocessing status byte address (62463) (170 = single user mode):
Example:

Poke 62463,170 : Rem set single user mode:
Poke 8778,18 : poke 8779,248 : Rem Reboot
X = USR (0)

- b. Example of print control page:

REM set-up device pointers
DIM DP(8) : DP(I)= 0 : NEXT I
FOR I = 1 to 8 : DP(I)=0 : NEXT I
DP(8)= 0 : DP(3)=1 : DP(6)= 2 : DP(5)=3
:
Flag 52,DV,PS,MS : Rem set-up page size
Flag 52,DV,0 : Rem turn off paging

REM test for end of page
IF PEEK (62347 + DP(DV))=PEEK (62351 + DP(DV))
THEN [do end of page routine]

REM test for first of page
IF PEEK (62347 + DP(DV))= PEEK (62351 + DP(DV))
THEN [do first of page routine]
REM test for printer busy
TM = Wait PRINT DV,0
IF TM = 0 Then [printer is busy]
REM else printer is acquired

- c. Example routine for testing for a set semaphore:

FOR SM = 0 TO 220
TM = Wait for SM,0
IF TM = 0 then [semaphore is set]
REM else semaphore is clear so clear semaphore
WAIT CLEAR SM: NEXT SM

APPENDIX A PROGRAM LISTINGS **A-1**

```
10 GOTO 100
20 :
30 ****
35 * DB-1 Multiprocessing Executive *
36 * (MP-65U CD-23/7)
37 *
40 *
45 * Written by Arthur R Hughes
46 * 28 October 82
47 *
48 * Copyright 1982 D.B.I., INC.
49 ****
50 :
51 :
52 :
53 :
54 :
55 :
56 :
57 :
58 :
59 :
60 :
61 :
62 :
63 :
64 :
65 **

70 :
100 REM Setup I/O Parameters
110 :
120 A=PEEK(11664) :POKE 11668,A
130 A=PEEK(11665) :POKE 11686,A
140 :
150 REM Bypass overlays if not DB-1 board
160 :
170 IF PEEK(65535)<>254 GOTO 10000
180 :
190 :
200 REM User Defined Bypass Code
210 :
220 IF PEEK(62463)=170 GOTO 10000
8998 :
8999 :
9000 REM Overlay OS-65U
9010 :
9020 POKE 8778,0 : POKE 8779,96
9030 X=USR(A)
9040 FLAG 54
9050 :
9060 :REM Disable XON - XOFF code
9070 :
9080 POKE 62400,0 : POKE 62410,0
9090 :
9100 REM Enable auto FF
9110 :
9120 FLAG 52,3,255
9130 FLAG 52,5,255
9140 FLAG 52,6,255
9150 FLAG 52,8,255
9190 :
9900 REM return to MMENU* if return status set
9910 :
9920 IF PEEK(62462)=170 THEN POKE 62462,0 :RUN"MMENU"
9999 :
10000 REM Exit to BEXEC*
10010 :
10020 RUN"BEXEC*"
63990 :
63991 :
63992 END
63993 :
63999 SAVE"MPEXEC*","PASS
```

```
10 GOTO 100
20 :
30 ****
35 * DB-1 Multiprocessing Executive *
36 * (MP-65U CD-36/74) *
40 *
45 * Written by Arthur R Hughes *
50 * 28 October 82 *
55 *
60 * Copyright 1982 D.B.I., INC. *
65 ****
70 :
100 REM Setup I/O Parameters
110 :
120 A=PEEK(11664) :POKE 11668,A
130 A=PEEK(11665) :POKE 11686,A
140 :
150 REM Bypass overlays if not DB-1 board
160 :
170 IF PEEK(65535)<>254 GOTO 10000
180 :
190 :
200 REM User Defined Bypass Code
210 :
220 IF PEEK(62463)=170 GOTO 10000
8998 :
8999 :
9000 REM Overlay OS-65U
9010 :
9020 POKE 8778,0 : POKE 8779,96
9030 X=USR(A)
9040 FLAG 54
9050 :
9060 :REM Disable XON - XOFF code
9070 :
9080 POKE 62400,0 : POKE 62410,0
9090 :
9100 REM Enable auto FF
9110 :
9120 FLAG 52,3,255
9130 FLAG 52,5,255
9140 FLAG 52,6,255
9150 FLAG 52,8,255
9190 :
9900 REM return to MMENU* if return status is set
9910 :
9920 IF PEEK(62462)=170 THEN POKE 62462,0 :RUN"MMENU"
9999 :
10000 REM Exit to BEXEC*
10010 :
10020 RUN"BEXEC"
63990 :
63991 :
63992 END
63993 :
63999 SAVE"MPEXC*","PASS
```

```

10      ;*****
20      ;* BUSMASTER TIEN      *    0300A 0000 000
30      ;* FOR CD-74/36        *    000000 0000 000
40      ;* BY ARTHUR R HUGHES *    000000 0000 000
50      ;* 28 OCTOBER 82       *    000000 0000 000
60      ;* 523768100           *    000000 0000 000
70      ;*
80      ;*      COPYRIGHT 1982  *    000000 0000 000
90      ;*      DBI, INC.      *    000000 0000 000
100     ;*****                  000000 0000 000
110     ;
120     ;
130     ;<<<<<<< $6000 >>>>>>>>
140     6000                 * = $6000
150     ;
160     6000 4C6460          JMP MOVE7
170     ;
180     ;*****
190     ;* VARIABLES AND CONSTANTS *
200     ;*****
210     ;
220     003F=                ENTRYS = 63      # OF PATCH CODES
230     624E=                ENTRYC = ENTRYS*6+EXECPT-1
240     ;
250     6005                 MOVEBC * = *+2      MOVE BYTE COUNT
260     ;
270     ;
280     ;*****
290     ;* PROG PATCH ROUTIEN   *
300     ;*****
310     ;
320     6005 A240             MOVE    LDX #ENTRYS+1      SETUP # OF CODES TO MOVE
330     6007 A94E             LDA #ENTRYC
340     6009 A062             LDY #ENTRYC/256
350     600B 8DBF60           MOVE8   STA MOVE1+1
360     600E 8CC060           STY MOVE1+2
370     6011 CA               MOVE5   DEX
380     6012 F04F             BEQ    MOVE6      DONE WITH XFER?
390     6014 20BE60           JSR    MOVE1      -YES
400     6017 8D0460           STA    MOVEBC+1
410     601A 20BE60           JSR    MOVE1
420     601D 8D0360           STA    MOVEBC
430     6020 20BE60           JSR    MOVE1      SETUP DEST ADD
440     6023 8D4560           STA    MOVE2+2
450     6026 20BE60           JSR    MOVE1
460     6029 8D4460           STA    MOVE2+1
470     602C 20BE60           JSR    MOVE1      SETUP SORCE ADD
480     602F 8D3A60           STA    MOVE3+2
490     6032 20BE60           JSR    MOVE1
500     6035 8D3960           STA    MOVE3+1
510     6038 AD8064           MOVE3   LDA EXEC      MOVE CODE
520     603B EE3960           INC    MOVE3+1
530     603E D003             BNE    MOVE2
540     6040 EE3A60           INC    MOVE3+2
550     6043 8D80EA           MOVE2   STA $EA80
560     6046 EE4460           INC    MOVE2+1
570     6049 D003             BNE    MOVE4
580     604B EE4560           INC    MOVE2+2
590     604E 38               MOVE4   SEC

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600	604F	AD0360	LDA	MOVEBC	
610	6052	E901	SBC	#1	
620	6054	8D0360	STA	MOVEBC	
630	6057	AD0460	LDA	MOVEBC+1	
640	605A	E900	SBC	#0	
650	605C	8D0460	STA	MOVEBC+1	
660	605F	B0D7	BCS	MOVE3	
670	6061	90AE	BCC	MOVE5	
680	6063	60	MOVE6	RTS	
690		;			
700	6064	200560	MOVE7	JSR MOVE	OVERLAY OS
710	6067	AD1347	LDA	\$4713	XMIT DK PARAM
720	606A	2038F1	JSR	RWEXT6	
730	606D	A202	LDX	#1+1	
740	606F	A9DA	LDA	#EXECPT+5	
750	6071	A060	LDY	#EXECPT+5/256	
760	6073	200B60	JSR	MOVE8	
770	6076	A000	LDY	#0	FIND END OF MEM
780	6078	8484	STY	\$84	
790	607A	B184	MOVE9	LDA (\$84), Y	
800	607C	49FF		EOR #\$FF	
810	607E	9184		STA (\$84), Y	
820	6080	D184		CMP (\$84), Y	
830	6082	D00B		BNE MOVE10	
840	6084	49FF		EOR #\$FF	
850	6086	9184		STA (\$84), Y	
860	6088	C8		INY	
870	6089	DOEF		BNE MOVE9	
880	608B	E685		INC \$85	
890	608D	DOEB		BNE MOVE9	
900	608F	A585	MOVE10	LDA \$85	
910	6091	C9EA		CMP #\$EA	
920	6093	F004		BEQ MOVE11	
930	6095	B006		BCS MOVE12	
940	6097	9008		BCC MOVE13	
950	6099	C080	MOVE11	CPY #\$80	
960	609B	9004		BCC MOVE13	
970	609D	A9EA	MOVE12	LDA #\$EA	
980	609F	A07F		LDY #\$7F	
990	60A1	8585	MOVE13	STA \$85	
1000	60A3	8484		STY \$84	
1010	60A5	38		SEC	SETUP TOP OF MEM FOR LOAD CMD
1020	60A6	98		TYA	
1030	60A7	EDB42D		SBC \$2DB4	
1040	60AA	8DB9F6		STA LSDK2+1	
1050	60AD	A585		LDA \$85	
1060	60AF	EDB52D		SBC \$2DB5	
1070	60B2	8DB5F6		STA LSDK1+1	
1080	60B5	A905		LDA #5	SET LEVEL 5
1090	60B7	8DBD3F		STA \$3FB	
1100	60BA	A900		LDA #0	
1110	60BC	A8		TAY	
1120	60BD	60		RTS	AND EXIT
1130		;			
1140	60BE	ADD560	MOVE1	LDA EXECPT	GET PNT
1150	60C1	48		PHA	
1160	60C2	38		SEC	
1170	60C3	ADBF60		LDA MOVE1+1	
1180	60C6	E901		SBC #1	

1190	60C8	8DBF60	STA MOVE1+1
1200	60CB	ADC060	LDA MOVE1+2
1210	60CE	E900	SBC #0
1220	60D0	8DC060	STA MOVE1+2
1230	60D3	68	PLA
1240	60D4	60	RTS
1250		;	
1260		;	*****
1270		;	* GLOBAL PARAMETERS *
1280		;	*****
1290		;	
1300	F153=	RWEXT1	= \$F153
1310	F138=	RWEXT6	= \$F138
1320	F380=	DKBASE	= \$F380
1330	EBB2=	NEWFLG	= \$EBB2
1340	EA80=	FLAGC	= \$EA80
1350	EACB=	FLAGX8	= \$EACB
1360	EBD6=	USER	= \$EBD6
1370	EC48=	PEEKST	= \$EC48
1380	EC5D=	WAIT	= \$EC5D
1390	ECDB=	CMDENT	= \$ECDB
1400	ED6A=	FMFED1	= \$ED6A
1410	ED89=	PRNTN8	= \$ED89
1420	ED8C=	PRNTN3	= \$ED8C
1430	ED8F=	PRNTN6	= \$ED8F
1440	ED92=	PRNTN5	= \$ED92
1450	EED9=	PRNTX3	= \$EED9
1460	EF47=	INPUT8	= \$EF47
1470	EF4A=	INPUT3	= \$EF4A
1480	EF4F=	INPUT6	= \$EF4F
1490	EF55=	INPUT5	= \$EF55
1500	EFBE=	INPTST	= \$EFBE
1510	F000=	PARSE	= \$F000
1520	F02B=	POKEC	= \$F02B
1530	F0C2=	BASTP1	= \$FOC2
1540	F0C6=	BASTP2	= \$FOC6
1550	F0D6=	FLOPEX	= \$F0D6
1560	FOEB=	FSUPH	= \$FOEB
1570	F113=	XFFBUF	= \$F113
1580	F127=	RWEXIT	= \$F127
1590	F365=	INTUP2	= \$F365
1600	6D65=	EXEC	= INTUP2-\$EA80+EXEC
1610	F175=	MSYSDT	= \$F175
1620	F16E=	MSYSTT	= \$F16E
1630	F180=	HDMPT	= \$F180
1640	F1AC=	HDMGT	= \$F1AC
1650	F1B5=	HREAD	= \$F1B5
1660	F1CF=	HREAD2	= \$F1CF
1670	F1D8=	HWRITE	= \$F1D8
1680	F212=	SBXFG	= \$F212
1690	F24B=	SBDUMP	= \$F24B
1700	F256=	HBUFDT	= \$F256
1710	F25E=	HEXIT	= \$F25E
1720	F264=	DMPSET	= \$F264
1730	F271=	INZBRI	= \$F271
1740	F282=	INZBRR	= \$F282
1750	F292=	TIMEBG	= \$F292
1760	F298=	FREPCH	= \$F298
1770	F69D=	SWPFX	= \$F69D

1780 F6AA= SWPFX1 = \$F6AA
1790 F6B4= LSDK1 = \$F6B4
1800 F6B8= LSDK2 = \$F6B8
1810 F80F= ARBITC = \$F80F
1820 ;
1830 ;*****
1840 ;* PATCH TABLE *
1850 ;*****
1860 ;
1870 60D5 8064 EXECPT .WORD EXEC
1880 60D7 80EA .WORD \$EA80
1890 60D9 7F08 .WORD \$F300-\$EA80-1
1900 ;
1910 60DB 656D .WORD EXECT
1920 60DD 65F3 .WORD INTUP2
1930 60DF 8A00 .WORD \$F3FO-INTUP2-1
1940 ;
1950 60E1 8071 .WORD HPATCH
1960 60E3 8146 .WORD \$4681
1970 60E5 5F00 .WORD HPTEND-HPATCH-1
1980 ;
1990 60E7 8162 .WORD PCH1
2000 60E9 0D4A .WORD \$4A0D
2010 60EB 0100 .WORD 2-1
2020 ;
2030 60ED 8362 .WORD PCH2
2040 60EF 8549 .WORD \$4985
2050 60F1 0200 .WORD 3-1
2060 ;
2070 60F3 8662 .WORD PCH3
2080 60F5 6819 .WORD \$1968
2090 60F7 0200 .WORD 3-1
2100 ;
2110 60F9 8962 .WORD PCH4
2120 60FB 6B19 .WORD \$196B
2130 60FD 0100 .WORD 2-1
2140 ;
2150 60FF 8B62 .WORD PCH5
2160 6101 7419 .WORD \$1974
2170 6103 0700 .WORD 8-1
2180 ;
2190 6105 9362 .WORD PCH6
2200 6107 AF09 .WORD \$09AF
2210 6109 0200 .WORD 3-1
2220 ;
2230 610B 9662 .WORD PCH7
2240 610D 740E .WORD \$0E74
2250 610F 0200 .WORD 3-1
2260 ;
2270 6111 9962 .WORD PCH8
2280 6113 2422 .WORD \$2224
2290 6115 0100 .WORD 2-1
2300 ;
2310 6117 9B62 .WORD PCH9
2320 6119 7604 .WORD \$0476
2330 611B 0200 .WORD 3-1
2340 ;
2350 611D 9E62 .WORD PCH10
2360 611F 6544 .WORD \$4465

2370 6121 0700	.WORD 8-1	DATA SHOW.	DATA DATA DATA
2380 ;		L-2 SHOW.	DATA DATA DATA
2390 6123 A662	.WORD PCH11	DATA SHOW.	DATA DATA DATA
2400 6125 5B4D	.WORD \$4D5B	DATA SHOW.	DATA DATA DATA
2410 6127 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2420 ;			
2430 6129 A962	.WORD PCH12	DATA SHOW.	DATA DATA DATA
2440 612B 553D	.WORD \$3D55	DATA SHOW.	DATA DATA DATA
2450 612D 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2460 ;			
2470 612F AC62	.WORD PCH13	DATA SHOW.	DATA DATA DATA
2480 6131 773E	.WORD \$3E77	DATA SHOW.	DATA DATA DATA
2490 6133 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2500 ;			
2510 6135 AF62	.WORD PCH14	DATA SHOW.	DATA DATA DATA
2520 6137 FC3D	.WORD \$3DFC	DATA SHOW.	DATA DATA DATA
2530 6139 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2540 ;			
2550 613B B262	.WORD PCH15	DATA SHOW.	DATA DATA DATA
2560 613D 393E	.WORD \$3E39	DATA SHOW.	DATA DATA DATA
2570 613F 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2580 ;			
2590 6141 B562	.WORD PCH16	DATA SHOW.	DATA DATA DATA
2600 6143 830E	.WORD \$0E83	DATA SHOW.	DATA DATA DATA
2610 6145 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2620 ;			
2630 6147 B862	.WORD PCH17	DATA SHOW.	DATA DATA DATA
2640 6149 9316	.WORD \$1693	DATA SHOW.	DATA DATA DATA
2650 614B 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2660 ;			
2670 614D BB62	.WORD PCH18	DATA SHOW.	DATA DATA DATA
2680 614F E007	.WORD \$07E0	DATA SHOW.	DATA DATA DATA
2690 6151 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2700 ;			
2710 6153 BE62	.WORD PCH19	DATA SHOW.	DATA DATA DATA
2720 6155 B407	.WORD \$07B4	DATA SHOW.	DATA DATA DATA
2730 6157 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2740 ;			
2750 6159 C162	.WORD PCH20	DATA SHOW.	DATA DATA DATA
2760 615B 0741	.WORD \$4107	DATA SHOW.	DATA DATA DATA
2770 615D 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2780 ;			
2790 615F C462	.WORD PCH21	DATA SHOW.	DATA DATA DATA
2800 6161 3242	.WORD \$4232	DATA SHOW.	DATA DATA DATA
2810 6163 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2820 ;			
2830 6165 C762	.WORD PCH22	DATA SHOW.	DATA DATA DATA
2840 6167 1D2E	.WORD \$2E1D	DATA SHOW.	DATA DATA DATA
2850 6169 0300	.WORD 4-1	L-2 SHOW.	DATA DATA DATA
2860 ;			
2870 616B CB62	.WORD PCH23	DATA SHOW.	DATA DATA DATA
2880 616D F733	.WORD \$33F7	DATA SHOW.	DATA DATA DATA
2890 616F 0200	.WORD 3-1	L-2 SHOW.	DATA DATA DATA
2900 ;			
2910 6171 CE62	.WORD PCH24	DATA SHOW.	DATA DATA DATA
2920 6173 E602	.WORD \$02E6	DATA SHOW.	DATA DATA DATA
2930 6175 0700	.WORD 8-1	L-2 SHOW.	DATA DATA DATA
2940 ;			
2950 6177 D662	.WORD PCH25	DATA SHOW.	DATA DATA DATA

2960 6179 1445 .WORD \$4514 F-8 SHOW.
2970 617B 0400 .WORD 5-1
2980 ;
2990 617D DB62 .WORD PCH26
3000 617F 1A40 .WORD \$401A
3010 6181 0100 .WORD 2-1
3020 ;
3030 6183 DD62 .WORD PCH27
3040 6185 5641 .WORD \$4156
3050 6187 0200 .WORD 3-1
3060 ;
3070 6189 E062 .WORD PCH28
3080 618B B02D .WORD \$2DB0
3090 618D 0000 .WORD 1-1
3100 ;
3110 618F E162 .WORD PCH29
3120 6191 0E24 .WORD \$240E
3130 6193 0200 .WORD 3-1
3140 ;
3150 6195 E462 .WORD PCH30
3160 6197 B335 .WORD \$35B3
3170 6199 0200 .WORD 3-1
3180 ;
3190 619B E762 .WORD PCH31
3200 619D C236 .WORD \$36C2
3210 619F 0200 .WORD 3-1
3220 ;
3230 61A1 EA62 .WORD PCH32
3240 61A3 4536 .WORD \$3645
3250 61A5 0200 .WORD 3-1
3260 ;
3270 61A7 ED62 .WORD PCH33
3280 61A9 384C .WORD \$4C38
3290 61AB 0200 .WORD 3-1
3300 ;
3310 61AD F062 .WORD PCH34
3320 61AF 1645 .WORD \$4516
3330 61B1 0200 .WORD 3-1
3340 ;
3350 61B3 F362 .WORD PCH35
3360 61B5 FD43 .WORD \$43FD
3370 61B7 0200 .WORD 3-1
3380 ;
3390 61B9 F662 .WORD PCH36
3400 61BB 5249 .WORD \$4952
3410 61BD 0200 .WORD 3-1
3420 ;
3430 61BF F962 .WORD PCH37
3440 61C1 AE37 .WORD \$37AE
3450 61C3 0200 .WORD 3-1
3460 ;
3470 61C5 FC62 .WORD PCH38
3480 61C7 F124 .WORD \$24F1
3490 61C9 0200 .WORD 3-1
3500 ;
3510 61CB FF62 .WORD PCH39
3520 61CD FD24 .WORD \$24FD
3530 61CF 0200 .WORD 3-1
3540 ;

3550 61D1 0263 .WORD PCH40
3560 61D3 CC43 .WORD \$43CC
3570 61D5 0500 .WORD 6-1
3580 ;
3590 61D7 0863 .WORD PCH41
3600 61D9 2E45 .WORD \$452E
3610 61DB 0900 .WORD 10-1
3620 ;
3630 61DD 1263 .WORD PCH42
3640 61DF 3F45 .WORD \$453F
3650 61E1 0600 .WORD 7-1
3660 ;
3670 61E3 1963 .WORD PCH43
3680 61E5 7C45 .WORD \$457C
3690 61E7 0700 .WORD 8-1
3700 ;
3710 61E9 2163 .WORD PCH44
3720 61EB 274C .WORD \$4C27
3730 61ED 0100 .WORD 2-1
3740 ;
3750 61EF 2363 .WORD PCH45
3760 61F1 AD4C .WORD \$4CAD
3770 61F3 0200 .WORD 3-1
3780 ;
3790 61F5 2663 .WORD PCH46
3800 61F7 894C .WORD \$4C89
3810 61F9 0200 .WORD 3-1
3820 ;
3830 61FB 2963 .WORD PCH47
3840 61FD 5737 .WORD \$3757
3850 61FF 0700 .WORD 8-1
3860 ;
3870 6201 3163 .WORD PCH48
3880 6203 6130 .WORD \$3061
3890 6205 0200 .WORD 3-1
3900 ;
3910 6207 3463 .WORD PCH49
3920 6209 964D .WORD \$4D96
3930 620B 0200 .WORD 3-1
3940 ;
3950 620D 3763 .WORD PCH50
3960 620F E03C .WORD \$3CEO
3970 6211 0200 .WORD 3-1
3980 ;
3990 6213 3A63 .WORD PCH51
4000 6215 C638 .WORD \$38C6
4010 6217 0100 .WORD 2-1
4020 ;
4030 6219 3C63 .WORD PCH52
4040 621B C438 .WORD \$38C4
4050 621D 0100 .WORD 2-1
4060 ;
4070 621F 3E63 .WORD PCH53
4080 6221 1412 .WORD \$1214
4090 6223 0300 .WORD 4-1
4100 ;
4110 6225 4263 .WORD PCH54
4120 6227 B02D .WORD \$2DB0
4130 6229 0000 .WORD 1-1

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4140 ; .WORD PCH55 6050 0010 0000
4150 622B 4363 .WORD $2D9A 6060 0010 0000
4160 622D 9A2D .WORD 2-1 6070 0010 0000
4170 622F 0100 ; .WORD PCH56 6080 0010 0000
4180 ; .WORD $OB07 6090 0010 0000
4190 6231 4563 .WORD 3-1 60A0 0010 0000
4200 6233 070B ; .WORD PCH57 60B0 0010 0000
4210 6235 0200 .WORD $4522 60C0 0010 0000
4220 ; .WORD 3-1 60D0 0010 0000
4230 6237 4863 ; .WORD PCH58 60E0 0010 0000
4240 6239 2245 .WORD $490A 60F0 0010 0000
4250 623B 0200 .WORD 4-1 6100 0010 0000
4260 ; .WORD F600-$EA80+EXEC 6110 0010 0000
4270 623D 4B63 .WORD $F600 6120 0010 0000
4280 623F 0A49 .WORD 256-1 6130 0010 0000
4290 6241 0300 ; .WORD PCH59 6140 0010 0000
4300 ; .WORD $407C 6150 0010 0000
4310 6243 0070 .WORD 3-1 6160 0010 0000
4320 6245 00F6 ; .WORD SPARE 6170 0010 0000
4330 6247 FF00 8 SPARE ENTRIES 6180 0010 0000
4340 ; *=*+48 6190 0010 0000
4350 6249 4F63 ; ****
4360 624B 7C40 ; * PATCHS *
4370 624D 0200 ; ****
4380 ; ****
4390 624F 5263 PCH1 .WORD NEWFLG 6200 0010 0000
4400 6281 B2EB PCH2 JMP FLAGC 6210 0010 0000
4410 ; **** 6220 0010 0000
4420 ; * PCHS 6230 0010 0000
4430 ; **** 6240 0010 0000
4440 ; **** 6250 0010 0000
4450 ; **** 6260 0010 0000
4460 6281 B2EB PCH3 JSR FLAGX8 6270 0010 0000
4470 6283 4C80EA PCH4 TXA 6280 0010 0000
4480 6286 20CBEA PCH5 TAY 6290 0010 0000
4490 6289 8A PCH6 LDA #$0A 62A0 0010 0000
4500 628A A8 PCH7 JSR $2D39 62B0 0010 0000
4510 628B A90A PCH8 JMP $4469 62C0 0010 0000
4520 628D 20392D PCH9 JSR USER 62D0 0010 0000
4530 6290 4C6944 PCH10 JSR PEEKST 62E0 0010 0000
4540 6293 20D6EB PCH11 JSR WAIT-1 62F0 0010 0000
4550 6296 2048EC PCH12 JSR CMDENT 6300 0010 0000
4560 6299 5CEC PCH13 CPX #0 6310 0010 0000
4570 629B 20DBEC PCH14 SEC 6320 0010 0000
4580 629E E000 PCH15 .BYTE $24 6330 0010 0000
4590 62A0 38 PCH16 CLC 6340 0010 0000
4600 62A1 24 PCH17 JMP FMFED1 6350 0010 0000
4610 62A2 18 PCH18 JMP PRNTN8 6360 0010 0000
4620 62A3 4C6AED PCH19 JMP PRNTN3 6370 0010 0000
4630 62A6 4C89ED PCH20 JMP PRNTN6 6380 0010 0000
4640 62A9 4C8CED PCH14 JMP PRNTN5 6390 0010 0000
4650 62AC 4C8FED PCH15 JMP PRNTX3 6400 0010 0000
4660 62AF 4C92ED PCH16 JMP PARSE 6410 0010 0000
4670 62B2 4CD9EE PCH17 JMP POKEC 6420 0010 0000
4680 62B5 4C00FO PCH18 JMP BASTP1 6430 0010 0000
4690 62B8 4C2BF0 PCH19 JMP BASTP2 6440 0010 0000
4700 62BB 20C2FO PCH20 JSR FLOPEX 6450 0010 0000
4710 62BE 4CC6FO
4720 62C1 20D6FO

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4730	62C4	20D6F0	PCH21	JSR	FLOPEX
4740	62C7	20EBF0	PCH22	JSR	FSUPH
4750	62CA	EA		NOP	
4760	62CB	4C27F1	PCH23	JMP	RWEXIT
4770	62CE	0944	PCH24	ORA	#\$44
4780	62D0	EA		NOP	
4790	62D1	EA		NOP	
4800	62D2	EA		NOP	
4810	62D3	EA		NOP	
4820	62D4	09C0		ORA	#\$C0
4830	62D6	EA	PCH25	NOP	
4840	62D7	38		SEC	
4850	62D8	2075F1		JSR	MSYSDT
4860	62DB	EA	PCH26	NOP	
4870	62DC	18		CLC	
4880	62DD	4C13F1	PCH27	JMP	XFFBUF
4890	62E0	00	PCH28	.BYTE	0
4900	62E1	20D6F0	PCH29	JSR	FLOPEX
4910	62E4	4CB5F1	PCH30	JMP	HREAD
4920	62E7	4CD8F1	PCH31	JMP	HWRITE
4930	62EA	4C12F2	PCH32	JMP	SBXFG
4940	62ED	4C4BF2	PCH33	JMP	SBDUMP
4950	62F0	2056F2	PCH34	JSR	HBUFDT
4960	62F3	4C6EF1	PCH35	JMP	MSYSTT
4970	62F6	4CAAFF6	PCH36	JMP	SWPFX1
4980	62F9	2064F2	PCH37	JSR	DMPSET
4990	62FC	2071F2	PCH38	JSR	INZBRI
5000	62FF	2082F2	PCH39	JSR	INZBRR
5010	6302	A900	PCH40	LDA	#0
5020	6304	8502		STA	\$02
5030	6306	A94E		LDA	#\$4E
5040	6308	6900	PCH41	ADC	#0
5050	630A	85B2		STA	\$B2
5060	630C	A5A2		LDA	\$A2
5070	630E	290F		AND	#\$0F
5080	6310	694E		ADC	#\$4E
5090	6312	A900	PCH42	LDA	#0
5100	6314	E5B2		SBC	\$B2
5110	6316	AA		TAX	
5120	6317	A95C		LDA	#\$5C
5130	6319	A900	PCH43	LDA	#0
5140	631B	E5B2		SBC	\$B2
5150	631D	85A9		STA	\$A9
5160	631F	A95C		LDA	#\$5C
5170	6321	C988	PCH44	CMP	#\$88
5180	6323	4C92F2	PCH45	JMP	TIMEBG
5190	6326	9980F3	PCH46	STA	DKBASE, Y
5200	6329	EA	PCH47	NOP	
5210	632A	EA		NOP	
5220	632B	A900		LDA	#0
5230	632D	A8		TAY	
5240	632E	8DFE4D		STA	\$4DFE
5250	6331	4CF733	PCH48	JMP	\$33F7
5260	6334	4C47EF	PCH49	JMP	INPUT8
5270	6337	4C4AEF	PCH50	JMP	INPUT3
5280	633A	4EEF	PCH51	.WORD	INPUT6-1
5290	633C	54EF	PCH52	.WORD	INPUT5-1
5300	633E	4C98F2	PCH53	JMP	FREPCH
5310	6341	EA		NOP	

5320 6342 00 PCH54 .BYTE 0
5330 6343 0000 PCH55 .WORD 0
5340 6345 20BEEF PCH56 JSR INPTST
5350 6348 4C5EF2 PCH57 JMP HEXIT
5360 634B 4C9DF6 PCH58 JMP SWPFX
5370 634E EA NOP
5380 634F 4CB4F6 PCH59 JMP LSDK1
5390 ;
5400 6352= SPARE = *
5410 ;
5420 ;<<<<<<< \$6480 >>>>>>>>
5430 6480 * = \$6480
5440 ;
5450 7180 EXEC *=*+\$0D00
5460 ;
5470 ;<<<<<<< HPATCH >>>>>>>
5480 ;
5490 ;*****
5500 ;* HARD DISK PATCHS *
5510 ;* \$4681 = HPATCH *
5520 ;*****
5530 ;
5540 7180 20ACF1 HPATCH JSR HDMGT
5550 7183 D018 BNE HPCH1
5560 7185 B016 BCS HPCH1
5570 7187 A2A0 LDX #\$A0
5580 7189 4CCFF1 JMP HREAD2
5590 718C D00F BNE HPCH1
5600 718E A204 LDX #4
5610 7190 B5A0 HPCH2 LDA \$A0,X
5620 7192 9D80F3 STA DKBASE,X
5630 7195 CA DEX
5640 7196 10F8 BPL HPCH2
5650 7198 200FF8 JSR ARBITC
5660 719B A900 LDA #0
5670 719D 60 HPCH1 RTS
5680 ;
5690 719E A5A2 LDA \$A2
5700 71A0 4C80F1 JMP HDMPT
5710 71A3 29F0 AND #\$F0
5720 71A5 D015 BNE HPCH3
5730 71A7 A5A3 LDA \$A3
5740 71A9 CD83F3 CMP DKBASE+3
5750 71AC D00E BNE HPCH3
5760 71AE A5A4 LDA \$A4
5770 71B0 CD84F3 CMP DKBASE+4
5780 71B3 D007 BNE HPCH3
5790 71B5 A5A0 LDA \$A0
5800 71B7 ED80F3 SBC DKBASE
5810 71BA F021 BEQ HPCH4
5820 71BC A900 HPCH3 LDA #0
5830 71BE 4C9F46 JMP \$469F
5840 71C1 EA NOP
5850 71C2 EA NOP
5860 71C3 EA NOP
5870 71C4 EA NOP
5880 71C5 18 CLC
5890 71C6 A204 LDX #4
5900 71C8 BD80F3 HPCH6 LDA DKBASE,X

5910 71CB 95A9 STA \$A9,X
5920 71CD CA DEX
5930 71CE 10F8 BPL HPCH6
5940 71DO A2A9 LDX #\$A9
5950 71D2 20602D JSR \$2D60
5960 71D5 48 PHA
5970 71D6 A900 LDA #0
5980 71D8 8DFE4D STA \$4DFE
5990 71DB 68 PLA
6000 71DC 18 CLC
6010 71DD 4COFF8 HPCH4 JMP ARBITC
6020 ;
6030 71E0= HPTEND = *
6040 ;