

LP11

DEVICE ROUTINE (MPG)
MD-11-DTLPA-B

EP-DTLPA-B-DL-A
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FICHE 1 OF 1

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MADE IN U.S.A.

This microfiche card contains a grid of frames. The frames are arranged in approximately 10 rows and 3 columns. Each frame contains a small, high-contrast image of data, likely a page from a document or a specific data record. The data is too small to be legible in this view, but it appears to be organized in a structured format, possibly a table or a list of records. The frames are separated by dark borders, and the overall layout is typical of a microfiche card used for data storage and retrieval.

DTLPA8.P11

.SBTTL REVISION HISTORY

- APR 76 DTLPA-B RELEASE
- DEC 75 ADDED MEMORY MANAGEMENT SUPPORT.
- OCT 75 CREATED FULL SUPPORT DEVICE ROUTINE
- AUG 75 DTLPA-A INITIAL RELEASE (MINIMUM SUPPORT DEVICE ROUTINE)

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.SBTTL STANDARD DEVICE ROUTINE TABLE

.TITLE MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
;REVISION 'B'
;FILENAME OF "TLPABD.MPG" ON MPG/XXDP MEDIA
;MACY11: DTLPA?,DTLPA?/CRF:SYN/DOC=DTLPA?.P11
;LNKX11: DTLPA?.MPG/B:0+DTLPA?/E
;PAPER TAPE: PUNCH DTLPA?.MPG/FILE:ELEV

.CSECT LP11
.DSABL GBL

000000'

;THE FOLLOWING TABLE IS IN THE STANDARDIZED FORMAT REQUIRED
;TO INTERFACE WITH MPG.

000000' 004120
000002' 000000

000004' 000000
000006' 000000
000010' 000000
000012' 000000
000014' 000000
000016' 000000
000020' 000000
000022' 000000
000024' 177514
000026' 000200
000030' 000200
000032' 000000
000034' 000566
000036' 000620
000040' 001172
000042' 000534
000044' 001106
000046' 000000
000050' 000000
000052' 000000
000054' 000000
000056' 000000
000060' 000000
000062' 000000
000064' 000000
000066' 000000
000070' 000000

LOCZ: .WORD DIVEREND-
DFLGWD: .WORD 0

SIZE: .WORD
ERR: .WORD
DREGAD: .WORD 177514
IVCTAD: .WORD 200
PSWD: .WORD 200

CIOBSY: .WORD
CUPGER: .WORD
ULIST: .WORD
CLIST: .WORD
BINASC: .WORD
BTASLZ: .WORD
DECASC: .WORD
CSYSPW: .WORD
SETVEC: .WORD
CLAVEC: .WORD

:DEVICE ROUT SIZE IN BYTES
:DEVICE ROUT FLAGWORD
:BIT 15 = "HOLD" FLAG
:BIT 14 = "PLOT" FLAG
:BIT 4 = "ISSUED TRAILING CR/LF" FLG
:BIT 3 = "TOF/EOT" CMD FLAG
:BIT 2 = "SPACE" CMD FLAG
:BIT 1 = "NO I/O TERMINATION"
:INTERFACE MOD 0 1 (NOT USED)
:INTERFACE MOD 0 2 (NOT USED)
:INTERFACE MOD 0 3 (NOT USED)
:INTERFACE MOD 0 4 (NOT USED)
:INTERFACE MOD 0 5 (NOT USED)
:INTERFACE MOD 0 6 (NOT USED)
:# OF BYTES TRANSFERRED / UNIMAP FLG
:ERROR ON LAST I/O INDICATOR
:FIRST DEVICE REGISTER ADR
:INTERRUPT VECTOR ADR
:INT PROC STATUS WORD (BR 4)
:NOT USED
:HOUSEKEEPING ROUT REL ADR
:REPORT ROUT REL ADR
:KILL ROUT REL ADR
:DATA ERROR COUNTER REL ADR
:TIME OUT ERROR ROUT REL ADR
:I/O BUSY PANCH ADR
:DEVICE ERROR BRANCH ADR
:USER MODE PRINT ROUTINE BRANCH ADR
:CMD MODE PRINT ROUTINE BRANCH ADR
:CONVERT BINARY TO ASCII ROUT BR ADR
:CONVERT BINARY TO DECIMAL ASCII BR ADR
:CONVERT PACKED DECIMAL TO ASCII BR ADR
:MPG SYSTEM FLAGWORD ADR
:SET INT VECT ROUT BR ADR
:CLEAR INT VECTOR ROUT BR ADR

112	000072	000000			TSTVEC:	.WORD	0
113	000074	000000			RTNINT:	.WORD	0
114	000076	000000			GETBYT:	.WORD	0
115	000100	000000			PUTBYT:	.WORD	0
116	000102	000014				.WORD	DVREGS-
117	000104	000072				.WORD	DVCHDS-
118	000106	000146				.WORD	DVPKTE-
119	000110	000264				.WORD	DVMVTE-
120	000112	000332				.WORD	DVCPTTE-
121	000114	000432				.WORD	DVINST-
122							
123							
124							
125	000116	050114	051503		DVREGS:	.ASCII	/LPCS/ 0
126	000122	000000				.WORD	0
127	000124	050114	041104			.ASCII	/LP08/ 2
128	000130	000002				.WORD	2
129	000132	051514	051503			.ASCII	/LSCS/ 0
130	000136	000000				.WORD	0
131	000140	051514	041104			.ASCII	/LS08/ 2
132	000144	000002				.WORD	2
133	000146	053114	051503			.ASCII	/LVCS/ 0
134	000150	000000				.WORD	0
135	000154	053114	041104			.ASCII	/LV08/ 2
136	000160	000002				.WORD	2
137	000162	050114	020123			.ASCII	/LPS / 0
138	000166	000000				.WORD	0
139	000170	050114	020102			.ASCII	/LPB / 2
140	000174	000002				.WORD	2
141		000176			DVREGE=	.	
142							
143	000176	130	001		DVCHDS:	.BYTE	130,1
144	000200	001170	000			.WORD	WRITE-
145	000202	376	000			.BYTE	376,0
146	000204	001066	000			.WORD	NOWAIT-
147	000206	375	000			.BYTE	375,0
148	000210	001042	000			.WORD	WAIT-
149	000212	374	000			.BYTE	374,0
150	000214	000442	000			.WORD	REPORT-
151	000216	373	000			.BYTE	373,0
152	000220	000436	000			.WORD	REPORT-
153	000222	372	000			.BYTE	372,0
154	000224	001270	000			.WORD	TOP-
155	000226	371	000			.BYTE	371,0
156	000230	001056	000			.WORD	PLOT-
157	000234	370	000			.BYTE	370,0
158	000236	001124	000			.WORD	NOPL0T-
159	000238	367	000			.BYTE	367,0
160	000240	001340	000			.WORD	EOT-
161	000242	366	000			.BYTE	366,0
162	000244	001402	000			.WORD	BUF CLR-
163	000246	365	000			.BYTE	365,0
164	000248	001154	000			.WORD	SPACE-
165	000250	177777	000			.WORD	177777
166	000254	047516	040527	052111	DVPKTE:	.ASCII	/NOWAIT/ 376,0
167	000262	376	000			.BYTE	376,0

```

:TEST INT VECTOR POUT BR ADR
:RETURN FROM INT FAUT BR ADR
:GET DATA BYTE ROUT E2 ADR
:PUT DATA BYTE ROUT E2 ADR
:ADR OF DEVICE REGISTER NAMES
:ADR OF DEVICE FUNCTIONS
:ADR OF PACK TBL EXTENSION
:ADR OF MODEL VECTOR TBL EXTEN.
:ADR OF COMPILER TBL EXTEN.
:ADR OF DEV INTERFACE MD SYM TBL

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:VALID DEVICE REGISTER NAMES &
:THEIR POSITIONS RELATIVE TO
:THE DEVICE REGISTERS BASE ADDRESS.

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:VALID DEVICE FUNCTIONS
:FLAG BYTE:
:BIT 7 = NPR DEV
:BIT 3 = MASSBUS DEV
:BIT 0 = 2 WORDS FOR ADR
:(18 BIT ADRS)

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:TABLE TERMINATOR

:PACK TABLE EXTENSION

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168 000264' 020040 040527 052111
169 000272' 375 000
170 000274' 052123 052101 051525
171 000302' 374 000
172 000304' 047503 047125 051524
173 000312' 373 000
174 000314' 020040 052040 043117
175 000322' 372 000
176 000324' 020040 046120 052117
177 000332' 371 000
178 000334' 047516 046120 052117
179 000342' 370 000
180 000344' 020040 042440 052117
181 000352' 367 000
182 000354' 052502 041506 051114
183 000362' 366 000
184 000364' 051440 040520 042503
185 000372' 365 000
186 000374' 000376 000550
187 000400' 000375 000550
188 000404' 000374 000550
189 000410' 000373 000550
190 000414' 000372 000550
191 000420' 07371 010550
192 000424' 000370 000550
193 000430' 000367 000550
194 000434' 000366 000550
195 000440' 000365 000551
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201 000444' 003 376
202 000446' 004537 000012
203 000452' 003 375
204 000454' 004537 000012
205 000460' 004 374
206 000462' 004537 000012 001002
207 000470' 004 373
208 000472' 004537 000012 001001
209 000500' 003 372
210 000502' 004537 000012
211 000506' 003 371
212 000510' 004537 000012
213 000514' 003 370
214 000516' 004537 000012
215 000522' 003 367
216 000524' 004537 000012
217 000530' 003 366
218 000532' 004537 000012
219 000536' 004 365
220 000540' 004537 000012 000000
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.ASCII / WAIT/
.BYTE 375,0
.ASCII /STATUS/
.BYTE 374,0
.ASCII /COUNTS/
.BYTE 373,0
.ASCII / TOF/
.BYTE 372,0
.ASCII / PLOT/
.BYTE 371,0
.ASCII /NOPLOT/
.BYTE 370,0
.ASCII / EOT/
.BYTE 367,0
.ASCII /BUF CLR/
.BYTE 366,0
.ASCII / SPACE/
.BYTE 365,0

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DVMVTE: .WORD 376,LWAIT-LOCZ ;MODEL VECTOR TABLE EXTEN.
         .WORD 375,LWAIT-LOCZ
         .WORD 374,LSTATS-LOCZ
         .WORD 373,LCOUNT-LOCZ
         .WORD 372,LTOF-LOCZ
         .WORD 371,L PLOT-LOCZ
         .WORD 370,LNOPLOT-LOCZ
         .WORD 367,LEOT-LOCZ
         .WORD 366,LBF CLR-LOCZ
         .WORD 365,LSPACE-LOCZ

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COMPILER TABLE EXTENSION

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DVCPT: .BYTE 3,376 ;NO WAIT
        .WORD 4537,10.
        .BYTE 3,375 ;WAIT
        .WORD 4537,10.
        .BYTE 4,374 ;STATUS
        .WORD 4537,10.,1002
        .BYTE 4,373 ;COUNTS
        .WORD 4537,10.,1001
        .BYTE 3,372 ;TOF
        .WORD 4537,10.
        .BYTE 3,371 ;PLOT
        .WORD 4537,10.
        .BYTE 3,370 ;NOPLOT
        .WORD 4537,10.
        .BYTE 3,367 ;EOT
        .WORD 4537,10.
        .BYTE 3,366 ;BUF CLR
        .WORD 4537,10.
        .BYTE 4,365 ;SPACE V
        .WORD 4537,10.,0

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DEVICE INTERFACE WORD SYMBOL TABLE

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.SBTTL LP11/LS11/LV11 SUPPORT ROUTINES ENTERED FROM MPG

;DEVICE ROUTINE HOUSEKEEPING

JSR RS, HSKEEP S/R CALL
.WORD 0 OR 1 0 = DO HSKP PER OPSW
1 = UNCOND. DO HSKP
R2 = PROG'S OPSW
DESTROYS R0, R1

000622 005725
0 0624 001003
C 0 0625 001010
C 0 0626 010700
C 0 0627 062700 177716
C 0 0628 012701 000023
C 0 0629 005301
000652 001375
000654 000205

HSKEEP: TST (RS)+
BNE 10\$
BIT #HSKPEP, R2
BNE 30\$
10\$: MOV PC, R0
ADD #HSKPST-, R0
MOV #HSKPEN-HSKPST/2, R1
20\$: CLR (R0)+
DEC R1
BNE 20\$
30\$: RTS RS

; UNCONDITIONALLY DO HSKP?
; N, Y-10\$
; OPSW SPECIFY EACH PASS HSKP?
; Y, N-30\$
; SET UP FIRST WD ADR
; SET UP # OF WORDS
; HSKP ALL NECESSARY AREAS
; EXIT IN-LINE

;LP11/LS11/LV11 REPORT ROUTINE

JSR RS, REPORT S/R CALL
.WORD FLAGWD
BIT 15 = CMD MODE CALL
BIT 9 = PRG STMT CALL
BIT 1 = DO STATUS REPORT
BIT 0 = DO COUNTS REPORT

000656 004067 002206
0 0657 004767 002234
0 0658 012504
0 0659 032704 000002
0 0660 001403
0 0661 004567 002240
0 0662 177656
0 0663 032704 177776
0 0664 010700
0 0665 062700 177650
0 0666 012701 000010
0 0667 005720
0 0668 001003
0 0669 005301
0 0670 001374
0 0671 004767
000736 004767 002216
0 0737 032704 000002
0 0738 001425
000750 010700
000752 062700 177602
000756 005720

REPORT: JSR R0, SAVREG
JSR PC, SUPTAD
MOV (RS)+, R4
BIT #2, R4
BEQ 5\$
JSR RS, STSTAT
.WORD CSTAT-
5\$: BIT #177776, R4
BNE 15\$
MOV PC, R0
ADD #COUNTS-, R0
MOV #CNTNUM, R1
10\$: TST (R0)+
BNE 15\$
DEC R1
BNE 10\$
BR DVREX
15\$: JSR PC, DEVID
BIT #2, R4
BEQ DISCNT
MOV PC, R0
ADD #1STAT-, R0
20\$: TST (R0)+

; SAVE REG'S R0 - RS
; SET UP PROG TBL ADR IN R3
; GET FLAGWD
; GOING TO DO STATUS DISPLAY?
; Y, N-5\$
; GO STORE STATUS REG'S
; DISPLAYING CNTS AT END OF
; PRG PASS? (Y, N-15\$)
; SET UP ADR OF CNTS
; GET # OF CNT WORDS
; THIS CNT WORD = 0?
; Y, N-15\$
; DECR WORD CNT
; CK'ED ALL WORDS? (Y, N-10\$)
; GO TO EXIT -- ALL CNTS ARE 0'S
; DISPLAY DEVICE I.D.
; DOING STATUS DISPLAY?
; Y, N-DISCNT
; SET UP ADR OF REG'S AT
; LAST INT
; BOTH REG'S = 0?


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369 000760' 001002 BNE 30S ;N,Y-40S
370 000761' 005710 TST (R0)
371 000762' 001407 BEQ 40S
372 000763' 004567 002322 30S: JSR RS,PRINT ;ISSUE 'AT LAST INT' MSG
373 000764' 002443 .WORD ATMSG-.
374 000765' 007714 .WORD 12.
375 000766' 007715 JSR RS,DISPST ;GO DISPLAY STATUS AT LAST INT
376 000767' 007716 .WORD 13.
377 001001' 004567 002304 40S: JSR RS,PRINT ;ISSUE 'CURRENTLY' MSG
378 001002' 002441 .WORD CURMSG-.
379 001003' 007712 .WORD 10.
380 001004' 007713 JSR RS,DISPST ;GO DISPLAY CURRENT STATUS
381 001005' 007714 .WORD CSTAT-.
382 001006' 032704 000001 DISCNT: BIT B1,R4 ;DISPLAY COUNTS?
383 001007' 001431 BEQ RPTEND ;Y,N-RPTEND
384 001008' 012700 000010 MOV #CNTNUM,R0 ;SET UP # OF WORDS
385 001009' 010701 MOV PC,R1 ;SET UP ADR OF CNTS
386 001010' 062701 177526 R00 #COUNTS-.,R1
387 001011' 010702 MOV PC,R2 ;SET UP TBL ADR
388 001012' 062702 000066 R00 #RPTBL-,R2
389 001013' 012267 000012 RPTLP: MOV (R2)+,RPTBAS ;MOV MSG ADR TO S/R LINKAGE
390 001014' 004067 002010 JSR R0,SAVEG ;SAVE ALL REG'S
391 001015' 011100 MOV (R1),R0 ;GET CURRENT COUNT
392 001016' 004577 176770 JSR RS,ABINASC ;CONVERT IT TO ASCII
393 001017' 000000 RPTBAS: .WORD XXXX
394 001018' 004067 002010 JSR R0,RESREG ;RESTORE REG'S
395 001019' 005721 TST (R1)+ ;POINT AT NXT CNT
396 001020' 005300 DEC R0 ;DONE ALL WORDS?
397 001108' 001363 BNE RPTLP ;Y,N-RPTLP
398 001109' 004567 002206 JSR RS,PRINT ;GO ISSUE COUNTS MSG
399 001110' 002442 .WORD CNTSMG-.
400 001111' 002233 .WORD CNTSEN-CNTSMG
401 001112' 004567 002176 RPTEND: JSR RS,PRINT ;ISSUE "END OF REPORT" MSG
402 001113' 002345 .WORD READMG-.
403 001114' 177763 .WORD -13.
404 001122' 004067 001756 DVREX: JSR R0,RESREG ;RESTORE REGISTERS
405 001123' 005725 TST (RS)+ ;SET UP RETURN POINT
406 001130' 000205 RTS ;EXIT IN-LINE

369 001132' 002476 REPTBL: .WORD BCMR-RPTBAS
370 001133' 002504 .WORD BCMR+6-RPTBAS
371 001134' 002531 .WORD CHDCMR-RPTBAS
372 001140' 002546 .WORD CHDCMS-RPTBAS
373 001142' 002575 .WORD CNTERR-RPTBAS
374 001144' 002612 .WORD CNTDCR-RPTBAS
375 001146' 002640 .WORD CNTINT-RPTBAS
376 001150' 002707 .WORD CNTXFR-RPTBAS

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378                                     ;TIMEOUT ERROR ROUTINE
379
380                                     ;JSR   RS,TOUTER           S/R CALL
381
382 TOUTER: JSR   RD,SAYREG           ;SAVE ALL REGISTERS
383          JSR   PC,SUPTAO         ;SET UP C/S REG & PROG TBL ADR'S
384          JSR   RS,SSTAT         ;STORE CURRENT STATUS
385          .WORD CSSTAT-
386          JSR   RS,TVECT         ;CK IF I HAVE VECTOR CONTROL
387          BR    10$              ;BR IF I DON'T
388          CLR   (R4)             ;RESET INT ENABLE
389          JSR   PC,RINTV         ;RESET INT VECTOR INFO
390          BIC   INT4IOT,(R3)     ;RESET WAITING FOR I/O FLAG
391          JSR   RS,ERRCSI        ;ISSUE TIMEOUT ERROR MSG
392          .WORD IOTO-ERRBAS
393          .WORD 14
394          JSR   RD,RESREG        ;RESTORE REGISTERS
395          MOV   (SP)+,RS         ;REMOVE RETURN ADR
396          JHP   @CUPGER         ;GO TO ERROR EXIT
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399                                     ;KILL USER PROGRAM ROUTINE
400
401                                     ;JSR   RS,KILL           S/R CALL
402                                     ;R3 MUST CONTAIN PROG TBL ADR
403                                     ;DESTROYS RD,R1
404
405 KILL: JSR   RS,TVECT           ;CK IF I HAVE VECTOR CONTROL
406       BR    KILLEX           ;BR IF I DON'T
407       CLR   @OREGADR         ;RESET INT ENABLE
408       JSR   PC,RINTV         ;RESET INT VECTOR INFO
409 KILLEX: RTS                    ;EXIT IN-LINE
    
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378 001152' 004067 001712
379 001153' 004067 001740
380 001154' 004067 001740
381 001155' 004067 001740
382 001156' 177372
383 001157' 004067 001644
384 001158' 004067 001644
385 001159' 004067 001644
386 001160' 004067 001644
387 001174' 004067 001644
388 001175' 004067 001644
389 001176' 004067 001610
390 001204' 042713 000010
391 001210' 004067 001304
392 001214' 001205
393 001216' 000016
394 001220' 004067 001660
395 001224' 012605
396 001226' 000177 176616
    
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.SBTTL LP11/LS11/LV11 FUNCTION ROUTINES

;"WAIT" FUNCTION ROUTINE

;JSR RS,WAIT FUNCTION CALL

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001252' 042767 100000 176522 WAIT: BIC #100000,DFLGMD ;RESET THE "NOWAIT" FLAG
001260' 004767 001114 JSR PC,CKDBSY ;WAIT IF BUSY & DO TERMINATION
001264' 004767 001524 JSR PC,RINTV ;RESET THE INTERRUPT VECTOR
001270' 000205 RTS RS ;EXIT IN-LINE

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;"NOWAIT" FUNCTION ROUTINE

;JSR RS,NOWAIT FUNCTION CALL

```

001272' 052767 100000 176502 NOWAIT: BIS #100000,DFLGMD ;SET THE "NOWAIT" FLAG
001300' 005067 176516 NOIOEX: CLR ERR ;RESET THE ERROR INDICATOR
001304' 000205 RTS RS ;EXIT IN-LINE

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;"PLOT" FUNCTION ROUTINE

;JSR RS,PLOT FUNCTION CALL

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001306' 004767 001610 PLOT: JSR PC,SUPTAD ;SET UP PROG TBL & C/S REG ADR
001312' 032763 000040 BIT #40,PMDLCD(R3) ;THIS A LV11?
001320' 001404 BEQ PLTERR ;Y,N-PLTERR
001322' 052767 040000 176452 BIS #40000,DFLGMD ;SET THE PLOT FLAG
001330' 000763 BR NOIOEX ;GO TO EXIT
001332' 004767 001140 PLTERR: JSR PC,STSADR ;STORE THIS STANT'S ADR
001336' 004567 001156 JSR RS,ERRCSI ;ISSUE INV CMD ERR
001342' 001271 .WORD INVCMD-ERRBAS
001344' 000030 .WORD 24
001346' 005267 177224 INC DATAER ;INCREMENT DATA ERROR COUNT
001352' 005367 177216 DEC ERRCNT ;RE-ADJUST DEV ERROR CNT
001356' 000567 BR LPERR ;GO TO ERROR EXIT

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;"NO PLOT" FUNCTION ROUTINE

;JSR RS,NO PLOT FUNCTION CALL

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001360' 042767 040000 176414 NO PLOT: BIC #40000,DFLGMD ;RESET THE PLOT FLAG
001366' 000744 BR NOIOEX ;GO TO EXIT

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;"WRITE" FUNCTION ROUTINE

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;JSR    RS,WRITE      FUNCTION CALL
;.WORD  ADR           DATA ADDRESS (NOT USED)
;.WORD  ADR           DATA ADDRESS (BITS 0 - 15)
;.WORD  CNT           BYTE COUNT
;.WORD  DEV           (NOT USED)

WRITE: JSR    PC,CKDBSY ;GO CK IF DEV IS BUSY
        INC    MISCNT  ;ADD 1 TO WRITE CMD CNT
        TST    (RS)+   ;BYPASS UNUSED ADDRESS WORD
        MOV    (RS)+,DATAADR ;STORE DATA ADR
        MOV    (RS)+,BYTCNT ;STORE BYTE COUNT
        TST    (RS)+   ;BYPASS UNUSED LINK WORD
        MOV    #100,CURCMD ;SET UP C/S REG VALUE
        BR     CMDCOM  ;GO TO CMD COMMON PROCESSING
    
```

;"SPACE" FUNCTION ROUTINE

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;JSR    RS,SPACE     FUNCTION CALL
;.WORD  NBR           # OF LINES TO SPACE

SPACE: JSR    PC,CKDBSY ;GO CK IF DEV IS BUSY
        INC    MISCNT  ;ADD 1 TO MISC. CMD CNT
        MOV    (RS)+,SPCNT ;GET # OF LINES TO SPACE
        BEQ    NOIOEX  ;CNT = 0? (N,Y-NOIOEX)
        BIS    #4,DFLGMD ;SET THE "SPACE" CMD FLAG
        CLR    SPDATA  ;SET SPACE DATA FOR PLOT MODE
        BIT    #40000,DFLGMD ;IN "PLOT" MODE?
        BNE    IOS     ;N,Y-108
        MOV    #5015,SPDATA ;SET SPACE DATA FOR A PRINTER
        MOV    PC,RO   ;STORE ADR OF SPACE DATA
        ADD    #SPDATA-,,RO
        MOV    RO,DATAADR
        MOV    #2,BYTCNT
        BR     WRCOM  ;SET UP DATA BYTE CNT OF 2
                    ;GO SET UP CMD
    
```

;"TOF" FUNCTION ROUTINE

```

;JSR    RS,TOF       FUNCTION CALL

TOF: JSR    PC,CKDBSY ;GO CK IF DEV BUSY
        INC    MISCNT  ;ADD 1 TO MISC. CMD CNT
        BIT    #40000,DFLGMD ;IN "PLOT" MODE?
        BNE    PLTTOF  ;N,Y-PLTTOF
        MOV    PC,RO   ;SET UP ADR OF FORM FEED CHAR
        ADD    #FORMFD-,,RO
        MOV    RO,DATAADR ;STORE CHAR'S ADR
        MOV    #1,BYTCNT  ;SET UP BYTE CNT OF 1
        BIS    #10,DFLGMD ;SET THE "TOF/EOT" CMD FLAG
        BR     WRCOM  ;GO SET UP CMD CODE
        MOV    #104,CURCMD ;SET UP PLOT FORM FD CMD
        CLR    BYTCNT  ;RESET THE BYTE CNT
        BR     CMDCOM  ;GO TO CMD COMMON PROCESSING
    
```

```

515                                     ;"EOT" FUNCTION ROUTINE
516
517                                     ;JSR   RS,EOT           FUNCTION CALL
518
519 001600' 004767 000574      EOT:   JSR   PC,CKDBSY      ;GO CK IF DEV BUSY
520 001604' 005267 176762      INC   MISCNT      ;ADD 1 TO MISC. CMD CNT
521 001610' 032767 040000 176164  BIT   #40000,DFLGND ;IN "PLOT" MODE?
522 001616' 001004      BNE   PLTEOT      ;N,Y-PLTEOT
523 001620' 010700      MOV   PC,R0      ;SET UP ADR OF EOT CHAR
524 001622' 062700 000023      ADD   #EOTBYT-.,R0
525 001626' 000745      BR    TOFEOT      ;GO TO TOF/EOT COMMON PROC
526 001630' 012767 000110 176754 PLTEOT: MOV   #110,CURCMD ;SET UP PLOT EOT CMD
527 001636' 005067 176746      CLR  BYTCNT      ;RESET BYTE CNT
528 001642' 000420      BR    CHDCOM      ;GO R0 CMD COMMON PROCESSING
529
530 001644'   014      FORMFD: .BYTE 014
531 001645'   004      EOTBYT: .BYTE 004
532
533                                     ;"BUFCLR" FUNCTION ROUTINE
534
535                                     ;JSR   RS,BUFCLR        FUNCTION CALL
536
537
538 001646' 004767 000526      BUFCLR: JSR  PC,CKDBSY ;GO CK IF DEV BUSY
539 001652' 005267 176714      INC   MISCNT      ;ADD 1 TO MISC. CMD CNT
540 001656' 012700 000020      MOV   #20,R0      ;SET UP BUFFER CLEAR BIT
541 001662' 032767 040000 176112  BIT   #40000,DFLGND ;IN "PLOT" MODE?
542 001670' 001401      BEQ   10S        ;Y,N-10S
543 001672' 005200      INC   R0          ;SET PLOT MODE BIT
544 001674' 010014      10S: MOV   R0,(R4)  ;ISSUE BUFFER CLEAR
545 001676' 004767 001112      JSR  PC,RINTV    ;RESET INT VECT INFO
546 001702' 000205      RTS   RS         ;EXIT TO USER'S PROG

```

```

548                                     ;COMMAND COMMON PROCESSING ROUTINE
549
550                                     ;R4 = ADR OF C/S REG DEV REG
551                                     ;R3 = PROG TBL ADR
552
553 001704' 042767 000020 176070 CMDCOM: BIC      #20,DFLGND      ;RESET "ISSUED TRAILING CR/LF" FLG
554 001712' 005063 000030          CLR      PTOCNT(R3)    ;INITIALIZE TIMEOUT COUNTER
555 001716' 000067 176672          CLR      CURCNT      ;RESET # OF BYTES XFERRED
556 001722' 005714          TST      (R4)        ;IS THE PRINTER ERROR BIT SET?
557 001724' 100011          BPL      CKRDY      ;Y,N-CKRDY
558 001726' 004567 000560          JSR      RS,ERRCS    ;ISSUE STATUS ERROR MSG
559 001732' 001242          .WORD    LPMSG-ERMBAS
560 001734' 000014          .WORD    12.
561 001736' 012767 000001 176056 LPERR: MOV      #1,ERR      ;SET THE ERROR INDICATOR
562 001744' 000177 176100          JMP      @CUPGER    ;GO TO MPG ERR RTN POINT
563 001750' 105714          CKRDY: TSTB     (R4)        ;IS READY SET?
564 001752' 100405          BMI      PRTOK     ;N,Y-PRTOK
565 001754' 004567 000532          JSR      RS,ERRCS    ;ISSUE RDY NOT SET ERROR MSG
566 001760' 001256          .WORD    NRDYMG-ERMBAS
567 001762' 000013          .WORD    11.
568 001764' 000764          BR      LPERR      ;GO TO ERROR EXIT
569 001766' 032767 040000 176006 PRTOK: BIF      #40000,DFLGND ;IN "PLOT" MODE?
570 001774' 001402          BZ      10$        ;Y,N-10$
571 001776' 005267 176610          INC      CURCMD     ;SET THE PLOT MODE BIT
572 001702' 002767 000002 175772 10$: BIS      #2,DFLGND    ;SET THE "PROCESS TERMINATION" FLAG
573 001710' 0052713 000010          BIS      #WT4IOT,(R3) ;SET WAITING FOR I/O TERM FLAG
574 001714' 016714 176572          MOV      CURCMD,(R4) ;ISSUE THE CMD
575 001720' 005767 175756          TST      DFLGND     ;"NOWAIT" BIT SET?
576 001724' 100405          BMI      WTNOT     ;N,Y-WTNOT
577 002026' 004577 176014          JSR      RS,@CIOBSY ;WAIT FOR I/O TO COMPLETE
578 002032' 004767 000642          JSR      PC,PROCTM  ;GO PROCESS TERMINATION
579 002036' 000205          CMDEX: RTS      RS ;EXIT IN-LINE TO USER PROG
580
581 002040' 042713 000010          WTNOT: BIC      #WT4IOT,(R3) ;RESET WAITING FOR I/O TERM
582 002044' 000774          BR      CMDEX     ;GO TO EXIT

```

.SBTTL LP11/LS11/LV11 INTERRUPT SERVICE ROUTINE

```

588 002046' 004067 001016 LPINT: JSR RD, SAVREG ;SAVE ALL REGISTERS
589 002052' 005267 176522 INC INTCNT ;ADD 1 TO INTERRUPT CNT
590 002058' 004767 001040 JSR PC, SUPTAD ;SET UP PROC TBL & C/S REG ADR'S
591 002062' 004567 001054 JSR RS, SYSTAT ;STORE ALL DEV REG'S
592 002066' 176466 .WORD ISTAT-
593 002070' 016700 176512 MOV DATA, R0 ;GET DATA ADDRESS
594 002074' 016702 176510 MOV BYTCNT, R2 ;GET BYTE COUNT
595 002100' 005714 TST (R4) ;PRINTER'S ERROR BIT SET?
596 002102' 100004 BPL IOS ;Y, N-IOS
597 002104' 012767 000001 175710 MOV #1, ERR ;SET THE ERROR INDICATOR
598 002112' 000516 BR INTEX2 ;GO TO INT EXIT
599 002116' 001500 IOS: TST R2 ;BYTE CNT = 0?
600 BEQ INTEX1 ;N, Y-INTEX1
601 ;TRANSFER DATA TO PRINTER
602
603 002120' 004777 175752 SNOBYT: JSR PC, GETBYT ;HAVE MPG GET DATA BYTE IN R1
604 002124' 110164 000002 MOV R1, 2(R4) ;SHIP A BYTE TO THE PRINTER
605 002130' 005267 176460 INC CURCNT ;INCR BYTES XFERRED CNT
606 002134' 005302 DEC R2 ;SUB 1 FROM BYTE COUNT
607 002136' 001405 BEQ CK4LTH CNT = 0? (N, Y-CK4LTH)
608 002140' 105714 TSTB (R4) ;READY SET AGAIN?
609 002142' 100106 BPL INTEX3 ;Y, N-INTEX3
610 002144' 005267 176432 INC XFRCNT ;ADD 1 TO ADDITIONAL XFER CNT
611 002150' 000763 BR SNOBYT ;GO ISSUE NXT BYTE
612
613 002152' 032767 000010 175622 CK4LTH: BIT #10, DFLGMD ;THIS A TOF OR EOT CMD?
614 002160' 001077 BNE INTEX3 ;N, Y-INTEX3
615 002162' 032714 000001 BIT #1, (R4) ;IN "PLOT" MODE?
616 002166' 001421 BEQ 40S ;Y, N-40S
617
618 ;CHECK FOR ISSUING PLOTTER LINE TERMINATE
619
620 002170' 032767 000004 175604 BIT #4, DFLGMD ;THIS A "SPACE" CMD?
621 002176' 001012 BNE 30S ;N, Y-30S
622 002200' 032763 000200 000002 BIT #SPOPER, POPSW(R3) ;SUPPOSED TO ISSUE LINE TERM?
623 002206' 001064 BNE INTEX3 ;Y, N-INTEX3
624 002210' 016701 176400 MOV CURCNT, R1 ;GET BYTES XFERRED CNT
625 002214' 162701 000200 20S: SUB #128, R1 ;CNT A MULTIPLE OF 128?
626 002220' 001457 BEQ INTEX3 ;N, Y-INTEX3
627 002222' 100374 BPL 20S
628 002224' 052714 000002 30S: BIS #2, (R4) ;ISSUE A PLOTTER LINE TERMINATE
629 002230' 000453 BR INTEX3 ;WAIT FOR LINE TO PRINT
630
631 ;CHECK FOR ISSUING PRINTER CR/LF
632
633 002232' 032767 000004 175542 40S: BIT #4, DFLGMD ;THIS A "SPACE" CMD?
634 002240' 001047 BNE INTEX3 ;N, Y-INTEX3
635 002242' 032763 000200 000002 BIT #SPOPER, POPSW(R3) ;SUPPOSED TO ISSUE CR/LF?
636 002250' 001043 BNE INTEX3 ;Y, N-INTEX3
637 002252' 032767 000020 175522 BIT #20, DFLGMD ;"TRAILING CR/LF" FLG SET?
638 002260' 001037 BNE INTEX3 ;N, Y-INTEX3
639 002262' 010700 MOV PC, R0 ;SET UP ADR OF CR/LF DATA

```

```

640 002764' 062700 001314      ADD      #CRLF-. ,R0
641 002770' 032777 000001 175566    BIT      #MVER, @CSYSFW      ;RUNNING UNDER MEM MGMT?
642 002776' 001402                BEQ      50$                ;Y,N-50$
643 002780' 162700 120000      SUB      #PSCONS,R0        ;ADJ ADR TO VIRTUAL SPACE
644 002784' 012702 000002      MOV      #2,R2             ;SET UP BYTE COUNT OF 2
645 002310' 052767 000020 175464    BIS      #20,DFLGND        ;SET "ISSUED TRAILING CR/LF" FLAG
646 002316' 000420                BR       INTEX3            ;GO TO INT EXIT
647
648
649
650
651 002320' 032767 000004 175454    INTEX1: BIT      #4,DFLGND      ;THIS A "SPACE" CMD?
652 002326' 001410                BEQ      INTEX2            ;Y,N-INTEX2
653 002330' 005767 176264      DEC      SPNT              ;DECR SPACE LINE CNT
654 002334' 001405                BEQ      INTEX2            ;DONE ALL LINES? (N,Y-INTEX2)
655 002338' 162700 000002      SUB      #2,R0             ;BACK UP DATA ADR
656 002342' 012702 000002      MOV      #2,R2             ;RESTORE BYTE CNT
657 002346' 000664                BR       SNOBYT            ;GO ISSUE BYTES AGAIN
658 002350' 042714 000100      INTEX2: BIC      #100,(R4)   ;RESET INT ENABLE
659 002354' 042713 000010      BIC      #M410T,(R3)       ;RESET WAIT FOR I/O TERM FLAG
660 002360' 010067 176222      INTEX3: MOV      R0,DATAOR   ;STORE NEW DATA ADR
661 002364' 010257 176220      MOV      R2,BYTCNT         ;STORE NEW BYTE CNT
662 002370' 004067 000510      JSR      R0,RESREG         ;RESTORE ALL REGISTERS
663 002374' 000177 175474      JMP      @RTNINT           ;EXIT FROM INTERRUPT

```



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664 .SBTTL SUBROUTINES FOR LPII/LSII/LVII FUNCTION ROUTINES
665
666
667 ;CHECK IF DEVICE IS BUSY AND WAIT IF IT IS
668
669 ;JSR PC,CKOBSY S/R CALL
670
671 ;DESTROYS R0,R3,R4
672 ;ON EXIT:
673 ;R3 = PROG TBL ADR
674 ;R4 = C/S REG ADR
675
676 002400' 004767 000516 CKOBSY: JSR PC,SUPTAD ;SET UP PROG TBL & C/S REG ADR'S
677 002404' 032714 000100 10S: BIT @100,(R4) ;INT ENABLE ON?
678 002410' 001403 BEQ 20S ;Y,N-20S
679 002412' 004577 175430 JSR R5,@CIOBSY ;RELEASE CONTROL
680 002416' 000772 BR 10S ;GO CK AGAIN
681 002420' 032767 000002 175354 20S: BIT @2,DFLGMD ;HAVE TO PROCESS PREV TERMINATION?
682 002426' 001403 BEQ 30S ;Y,N-30S
683 002430' 004767 000244 JSR PC,PROCTH ;GO PROCESS TERMINATION
684 002434' 000763 BR 10S ;GO RECHECK INT ENABLE
685 002436' 016767 175364 000012 30S: MOV IVCTAD,40S ;STORE INT VECTOR ADR
686 002444' 016767 175360 000006 MOV PSMD,45S ;STORE PROG STATUS WORD
687 002450' 004577 175410 JSR R5,@SETVEC ;GO SET UP THE VECTOR
688 002454' 000000 40S: .WORD XXXX ;INT VECTOR ADR
689 002460' 000000 45S: .WORD XXXX ;PSW
690 002462' 177364 .WORD LPINT- ;REL INT ROUT ADR
691 002464' 005067 175332 CLR ERR ;RESET THE ERROR INDICATOR
692 002470' 042767 000014 175304 BIC @14,DFLGMD ;RESET "SPACE" & "TOF/EOT" FLAGS
693 002476' 010567 176102 STSADR: MOV R5,ERRADR ;SAVE CURR USER STANT ADR
694 002502' 162767 000004 176074 SUB @4,ERRADR
695 002510' 000207 RTS PC ;EXIT IN-LINE
696
697
698
699 ;ERROR INFORMATION DISPLAY S/R
700
701 ;JSR R5,ERRCS S/R CALL FOR CURR STATUS
702 ;JSR R5,ERRIS S/R CALL FOR INT STATUS
703 ;.WORD R5,ERRBAS REL ADR OF ERROR MSG
704 ;.WORD MSGCNT # OF BYTES IN ERROR MSG
705 ;R3 = PROG TBL ADR
706 ;DESTROYS R0,R1,R2
707 002512' 004567 000424 ERRCS: JSR R5,STSTAT ;STORE CURR STATUS
708 002516' 176042 .WORD CSTAT-
709 002520' 012767 175742 000070 ERRCS1: MOV @CSTAT-ERSTAD,ERSTAD ;STORE ADR OF CURR STATUS
710 002526' 000403 BR ERRCOM ;GO TO COMMON POINT
711 002530' 012767 175736 000060 ERRIS: MOV @ISTAT-ERSTAD,ERSTAD ;STORE ADR OF LAST INT STATUS
712 002536' 012567 000034 ERRCOM: MOV (R5)+,ERRBAS ;STORE MSG ADR
713 002542' 012567 000032 MOV (R5)+,ERRCNT ;STORE MSG CNT
714 002546' 005267 176022 INC ERRCNT ;ADD 1 TO ERROR CNT
715 002552' 032763 020000 000002 BIT @PRONER,POPSW(R3) ;ERROR PRINTING INHIBITED?
716 002560' 001046 BNE ERREX ;N,Y-ERREX
717 002562' 010446 MOV R4,-(SP) ;SAVE R4
718 002564' 005004 CLR R4 ;SET USER MODE PRINT FLAG
719 002566' 004767 000366 JSR PC,DEVID ;DISPLAY DEVICE I.D.

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720 002572' 004567 000516          SS:   JSR   RS,PRINT          ;PRINT ERROR MSG SPECIFIED
721 002576' 000000          ERMBAS: .WORD  XXXX
722 002580' 000000          .WORD  XXXX
723 002584' 000000          .WORD  XXXX
724 002588' 000000          .WORD  XXXX
725 002592' 004567 177770 001271  CHP   ERMBAS,#INVCHD-ERMBAS ;INVALID FUNCTION?
726 002596' 103003          BHIS  ERMBAS          ;N,Y-ERRSNM
727 002600' 004557 000424          JSR   RS,DISPST        ;DISPLAY STATUS REG'S
728 002604' 000000          ERSTAD: .WORD  XXXX
729 002608' 016300 000022          ERSNM:  MOV   PSRCST(R3),R0 ;GET ADR OF SRC STMTS
730 002612' 111001          10S:  MOVB  (R0),R1          ;SAVE STMT LENGTH
731 002616' 005067 000004 175750  CHP   4(R0),ERRADR     ;ERROR OCCUR ON THIS STMT?
732 002620' 001402          BEQ   20S              ;N,Y-20S
733 002624' 001000          R00   R1,R0           ;POINT AT NXT STMT
734 002628' 000771          BR    10S             ;GO CK NXT STMT
735 002632' 005720          20S:  TST   (R0)+        ;SET UP ADR OF STMT & DATA
736 002636' 010701          MOV   PC,R1          ;SET UP DATA OUTPUT ADR
737 002640' 003701 001164          R00   #STNUM-,R1
738 002644' 004577 175204          JSR   RS,DECASC        ;CONVERT IT TO ASCII
739 002648' 012767 020040 001152          MOV   #20040,STNUM+4 ;SET 2 LOW DIGITS TO SPACES
740 002652' 004567 000424          JSR   RS,PRINT        ;ISSUE STMT & MSG
741 002656' 001132          .WORD  STNUM-
742 002660' 177762          .WORD  -14
743 002664' 012604          MOV   (SP)+,R4       ;RESTORE R4
744 002668' 000205          ERREX: RTS            ;EXIT IN-LINE

;PROCESS TERMINATION OF PREVIOUS I/O FUNCTION

;JSR   PC,PROCTH      S/R CALL
749 002700' 004067 000164          PROCTH: JSR   R0,SAVREG    ;SAVE ALL REG'S
750 002704' 042767 000002 175070          BIC   #2,DFLGND      ;RESET PROCESS TERMINATION FLAG
751 002708' 016767 175676 175100          MOV   CURCNT,SIZE    ;STORE # OF BYTES ACTUALLY XFERRED
752 002712' 005767 175670 175640          ADD   CURCNT,BYMR+2  ;ADD THEM INTO TOTAL BYTE CNT
753 002716' 00567 175632          R0C   BYMR           ;UPDATE MOST SIGNF WORD OF CNT
754 002720' 005767 175064          6S:   TST   ERR        ;WAS THERE AN ERROR?
755 002724' 001421          BEQ   80S            ;Y,N-80S
756 002728' 002763 000400 000002          BIT   #00ERCK,POPSW(R3) ;SUPPOSED TO DO ERROR CHECKING?
757 002732' 001013          BNE   70S            ;Y,N-70S
758 002736' 004567 177554          JSR   RS,ERRIS        ;GO ISSUE STATUS ERROR MSG
759 002740' 001242          .WORD  LPEMSG-ERMBAS
760 002744' 001014          .WORD  12
761 002748' 004767 000030          65S:  JSR   PC,RINTV        ;GO RESET INT VECTOR
762 002752' 004067 000114          JSR   R0,RESREG      ;RESTORE REG'S
763 002756' 004577 175054          JSR   RS,ACUPGER     ;GO TO MPG ERR RETN POINT
764 002760' 001307          RTS                    ;EXIT IN-LINE
765 002764' 005267 175572          70S:  INC   ERRCNT      ;ADD 1 TO ERROR CNT
766 003002' 004767 000006          80S:  JSR   PC,RINTV        ;GO RESET INT VECTOR
767 003006' 004067 000072          JSR   R0,RESREG      ;RESTORE REG'S
768 003012' 000207          RTS                    ;EXIT IN-LINE

```

```

770                                     ;RESET INTERRUPT VECTOR S/R
771
772                                     ;JSR   PC,RINTV      S/R CALL
773                                     ;R3 MUST CONTAIN PROG TBL ADR
774                                     ;DESTROYS R0
775
776 003014' 004567 000020      RINTV: JSR   RS,TVECT      ;GO CK IF I HAVE VECTOR CONTROL
777 003020' 000406              OR    RINTEX      ;BR IF I DON'T
778 003030' 016767 175000 000004  MOV   IVCTAD,10$ ;GET CURR INT VECT ADR
779 003030' 004577 175034      JSR   RS,@CLAVEC ;GO HAVE MPG CLEAR IT
780 003034' 000000      10$: .WORD XXXX
781 003036' 000207      RINTEX: RTS   PC          ;EXIT IN-LINE
782
783
784                                     ;TEST INTERRUPT VECTOR S/R
785
786                                     ;JSR   RS,TVECT      S/R CALL
787                                     ;BR    LABEL        EXECUTED IF NOT SAME
788                                     ;R3 MUST CONTAIN PROG TBL ADR
789                                     ;DESTROYS R0
790
791 003040' 016767 174762 000010  TVECT: MOV   IVCTAD,20$ ;GET CURR INT VECT ADR
792 003046' 016346 000004              MOV   PFMADR(R3),-(SP) ;STORE FLGMD ADR TO IDENTIFY ME
793 003052' 004577 175014      JSR   RS,@TSTVEC ;DO I HAVE VECTOR CONTROL?
794 003056' 000000      20$: .WORD XXXX ;MPG WILL TELL ME SINCE I CAN'T
795 003060' 176766              .WORD LPINT- ;GET AT LOWER MEM IF MEM MGMT
796 003062' 000401              BR    TVECTX ;BR IF I DON'T HAVE CNTRL
797 003064' 005725              TST   (RS)+ ;BYPASS BR INST IN S/R CALL
798 003066' 000205      TVECTX: RTS   RS          ;EXIT IN-LINE

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```

800          .SBTTL SUBROUTINES FOR LP11/LS11/LV11 DEVICE ROUTINE
801
802
803
804          ;SAVE REGISTERS R0 THRU R5
805
806          ;JSR    R0,SAVREG          S/R CALL
807
808          SAVREG: MOV    R1,-(SP)      ;SAVE R0 THRU R5
809          MOV    R2,-(SP)
810          MOV    R3,-(SP)
811          MOV    R4,-(SP)
812          MOV    R5,-(SP)
813          MOV    R0,PC              ;EXIT IN-LINE
814
815
816          ;RESTORE REGISTERS R0 THRU R5
817
818          ;JSR    R0,RESREG          S/R CALL
819
820          RESREG: TST    (SP)+        ;RESTORE R5 THRU R0
821          MOV    (SP)+,R5
822          MOV    (SP)+,R4
823          MOV    (SP)+,R3
824          MOV    (SP)+,R2
825          MOV    (SP)+,R1
826          RTS    R0                ;EXIT IN-LINE
827
828
829          ;SET PROGRAM'S PROG TABLE ADR IN R3 & C/S REG ADR IN R4
830
831          ;JSR    PC,SUPTAD          S/R CALL
832
833          SUPTAD: MOV    PC,R3        ;SET UP LOCATION ZERO ADR
834          ADD    @LOCZ-,R3
835          SUB    -2(R3),R3          ;SUBTRACT PROG TBL LENGTH
836          MOV    DREGADR,R4        ;PUT C/S REG ADR IN R4
837          RTS    PC                ;EXIT IN-LINE
838
839
840          ;STORE DEVICE'S STATUS REGISTERS
841
842          ;JSR    R5,STSTAT          S/R CALL
843          ;WORD  STADR-              REL STORAGE ADR
844          ;DESTROYS R0,R1
845
846          STSTAT: MOV    R5,R1        ;GET REL STORAGE ADR & MAKE
847          ADD    (R5)+,R1          ;IT ABSOLUTE
848          MOV    DREGADR,R0        ;GET ADR OF DEV REG'S
849          MOV    (R0)+(R1)+        ;STORE BOTH DEV REG'S
850          MOV    (R0),(R1)
851          RTS    R5                ;EXIT IN-LINE
    
```

174654
177776
174664

174652

```

853                                     ;TAILOR & DISPLAY DEVICE I.D.
854
855                                     ;JSR   PC,DEVID   S/R CALL
856                                     ;R3 MUST CONTAIN PROG TBL ADR
857                                     ;DESTROYS R0,R1,R2
858
859 003160' 012700 050114   DEVID:  MOV   R"LP,R0   ;SET UP LP11 I.D.
860 003164' 032763 000060 000032  BIT   R60,PHOLCD(R3) ;THIS A LP11?
861 003172' 001410                BEQ   108         ;N.Y-108
862 P.2 003174' 012700 051514                MOV   R"LS,R0   ;SET UP LS11 I.D.
863 C 20' 000763 000020 000032  BIT   R20,PHOLCD(R3) ;THIS A LS11?
864 0 36' 001002                BNE   108         ;N.Y-108
865 0 10' 012700 053114                MOV   R"LV,R0   ;SET UP LV11 I.D.
866 C 14' 010067 000264   108:  MOV   R0,DVDMG+4 ;TAILOR PRINTER'S MODEL CODE
867 C 20' 010067 000274                MOV   R0,DVFM2  ;TAILOR DEV REG NAMES
868 0 4' 010067 000304                MOV   R0,DVRCM2
869 000030' 004567 000060                JSR   R5,PRINT  ;GO ISSUE DEVICE I.D. MSG
870 003234' 000244                .WORD DVDMG-.
871 003236' 000020                .WORD 16.
872 003240' 000207                RTS    PC       ;EXIT IN-LINE
873
874
875                                     ;TAILOR STATUS MSG & PRINT IT
876
877                                     ;JSR   R5,DISPST  S/R CALL
878                                     ;WORD  STATAOR-.  REL ADR OF STATUS DATA
879                                     ;DESTROYS R0,R1,R2
880
881 003242' 010502   DISPST: MOV   R5,R2   ;GET REL DATA ADR
882 003244' 062502                ADD   (R5)+,R2  ;MAKE IT ABS
883 003246' 012200                MOV   (R2)+,R0  ;GET REG'S STORED VALUE
884 003250' 010246                MOV   R2,-(SP)  ;SAVE R2
885 003252' 004577 174600                JSR   R5,29INASC ;CONVERT IT TO ASCII
886 003256' 000250                .WORD DVRCM1-.
887 003260' 012602                MOV   (SP)+,R2  ;RESTORE R2
888 003262' 011200                MOV   (R2),R0   ;GET SECOND REG VALUE
889 003264' 004577 174566                JSR   R5,24INASC ;CONVERT IT
890 003270' 000252                .WORD DVRCM2-.
891 003272' 004567 000016                JSR   R5,PRINT  ;PRINT THE STATUS MSG
892 003276' 000222                .WORD DVRCM2-.
893 003300' 000014                .WORD 12.
894 003302' 004567 000006                JSR   R5,PRINT
895 003306' 000226                .WORD DVRCM2-.
896 003310' 000014                .WORD 12.
897 003312' 000205                RTS    R5       ;EXIT IN-LINE

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899                                     ;ISSUE MSG TO LIST DEVICE
900
901                                     ;JSR   RS,PRINT          S/R CALL
902                                     ;.WORD MSGADR-.      REL ADR OF MSG
903                                     ;.WORD BYTCNT      MSG BYTE CNT (IF NEGATIVE,
904                                     ;                                     RESET PRT DEV DEDICATED.)
905
906                                     ;R3 = PROG TBL ADR
907                                     ;R4 = FLAGWORD -- IF NEGATIVE, USE CHND MODE PRINT
908                                     ;DESTROYS R0,R1,R2
909 003314' 010500          PRINT:  MOV   RS,R0          ;GET MSG ADR & MAKE IT ABS
910 003316' 062500          ADD    (RS)+,R0
911 003320' 012501          MOV   (RS)+,R1      ;GET BYTE COUNT
912 003322' 005704          TST   R4          ;USE CHND MODE PRINT?
913 003324' 100030          BPL   40S          ;Y N-40S
914 003326' 010702          MOV   PC,R2          ;SET UP LINK INFO ADR
915 003330' 062702          ADD    R2,R2          ;MAKE MSG ADR REL
916 003334' 160200          SUB   R2,R0          ;STORE MSG ADR
917 003336' 010022          MOV   R0,(R2)+      ;STORE MSG'S BYTE COUNT
918 003340' 010112          MOV   R1,(R2)       ;CNT NEG? (Y N-10S)
919 003342' 100001          BPL   10S          ;MAKE IT POSITIVE
920 003344' 005412          NEG   (R2)          ;STORE PROG'S # IN MSG
921 003346' 016367          MOV   PASCIN(R3),PROG# ;ISSUE PROG #
922 003354' 004577          JSR   RS,@CLIST
923 003356' 000050          .WORD PRTMSG-.
924 003358' 000005          .WORD 5
925 003364' 004577          JSR   RS,@CLIST      ;ISSUE MSG SPECIFIED
926 003370' 000000          .WORD XXXX
927 003372' 000000          .WORD XXXX
928 003374' 000077          JSR   RS,@CLIST      ;ISSUE A <CR> & <LF>
929 003400' 000200          .WORD CRLF-.
930 003402' 000002          .WORD 2
931 003404' 000410          BR    PRTEX          ;GO TO EXIT
932 003406' 010067          MOV   R0,50S        ;STORE MSG'S ABS ADR
933 003412' 010167          MOV   R1,60S        ;STORE ITS BYTE CNT
934 003416' 004577          JSR   RS,@CLIST      ;GO TO MPG TO ISSUE THE MSG
935 003422' 000000          50S: .WORD XXXX
936 003424' 000000          60S: .WORD XXXX
937 003426' 000205          PRTEX: RTS          ;EXIT IN-LINE

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.SBTTL LP11/LS11/LV11 MESSAGE STORAGE AREA

.NLIST BEX

.EVEN
.P11MSG: .ASCII /P11/
PROGMM: .ASCII /XX/<011>
AT1MSG: .ASCII 'AT LAST INT:'
CURMSG: .ASCII /CURRENTLY:/
RENDMG: .ASCII /END OF REPORT/

.EVEN
DVIDMG: .ASCII /***XX11 PRINTER/

.EVEN
DVRGMG: .ASCII /XXCS= /
DVRGDT: .ASCII /XXXXXX/
DVRGM2: .ASCII /XXDB= /
DVRGD2: .ASCII /XXXXXX/

.CNTSMG: .ASCII /BYTES: MR= /
BCHMR: .ASCII /XXXXXXXXXXXX/
CRLF: .ASCII <015><012>

.CMDCMR: .ASCII <011>/CMDS: MR= /
CMDCMS: .ASCII /XXXXXX MISC= /
.CNTEPR: .ASCII <011>/ERRORS: DEV= /
CNTDER: .ASCII /XXXXXX DATA= /
CNTINT: .ASCII /XXXXXX/<015><012>
CNTXFR: .ASCII <011>/ADDITIONAL XFRS DURING INT: /
CNTSEN= .ASCII /XXXXXX/

IOTO: .ASCII 'TIMEOUT ON I/O'

.EVEN
ST1MSG: .ASCII /STMT # /
ST1NUM: .ASCII /XXXXXX/
LPEMSG: .ASCII /STATUS ERROR/
NRDYMG: .ASCII /RDY NOT SET/
INVCHD: .ASCII '"PLOT" INV FOR LP11/LS11'

.EVEN

.LIST BEX

DVREND= .

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003430' 021520
003432' 054130 011
003435' 101 020124 040514
003451' 103 051125 042522
003463' 105 042116 047440

003500' 025052 025052 054130
003520' 054130 051503 020075
003534' 054130 054130 054130
003542' 054130 041104 020075
003542' 054130 054130 054130
003550' 044502 042524 035123
003550' 054130 054130 054130
003600' 005015

003602' 041411 047115 051504
003617' 054130 054130 054130
003634' 054130 054130 054130
003644' 042411 051122 051117
003653' 054130 054130 054130
003700' 054130 054130 054130
003710' 044411 02116 051105
003726' 054130 054130 054130
003736' 040411 042104 02111
003775' 130 054130 054130

004003' 004003'
004022' 124 046511 047505

004022' 052123 047115 020124
004032' 054130 054130 054130
004040' 052123 052101 051525
004054' 042122 020131 047516
004067' 042 046120 052117
004120'

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.SBTTL FORMATS FOR PROGRAM & DEVICE ROUTINE TABLES

; PROGRAM TABLE FORMAT

000242	PTLGTH= 162.	;PROGRAM TABLE LENGTH - NON MEM MGMT VERSION OF MPG
	;(PTLGTH= 212.	;PROGRAM TABLE LENGTH - MEM MGMT VERSION OF MPG)
000000	PFLGWD= +0.	;PROGRAM FLAG WORD - 1 WORD
000002	URSTOP= 2	; 1 = USER HAS STOPPED THIS PROGRAM
000004	ERSTOP= 4	; 1 = FN ERROR HAS STOPPED THIS PROGRAM
000010	WT4IOT= 10	; 1 = WAITING FOR I/O TERMINATION
000020	CTPRIO= 20	; 1 = CONSOLE OR PRINTER I/O IN PROGRESS
000040	SETDED= 40	; 1 = THIS PROG SET THE PAT DEV DEDICATED FLAG
000100	OCPRES= 100	; 1 = OBJ CODE IS PRESENT
000200	USEUBM= 200	; 1 = THIS PROG USES THE UNIBUS MAP (MEM MGMT ONLY)
100000	ACTIVE= 100000	; 1 = PROGRAM IS ACTIVE (SPECIFIED FOR EXECUTION)
000002	POPSW= +2.	;PROGRAM'S OPERATION SWITCHES - 1 WORD
100000	STONER= 100000	; 1 = STOP PROG EXECUTION UPON ERROR
040000	CYCF = 40 0	; 1 = CYCLE PROGRAM (ON CURRENT DEVICE)
020000	PRNERR= 2 0	; 1 = DO NOT PRINT ON ERROR
010000	BIT12= 1 0	; 0 = NOT USED
004000	BIT11= 4000	; 0 = NOT USED
002000	CYCDL = 2000	; 1 = CYCLE THE DEVICE LIST
001000	GTXTD= 1000	; 1 = CYCLE ON S/E DEVICE UPON ERROR
000400	DOECHK= 400	; 1 = DON'T DO ERROR CHECKING
000200	SPOWER= 200	; 1 = DEVICE SPECIAL OPERATION
000100	BIT6= 100	; 0 = NOT USED
000040	DOIOT= 40	; 1 = DO NOT PERFORM I/O TIMEOUT
000020	AUTORP= 20	; 1 = DO NOT AUTOMATICALLY DISPLAY COUNTS
000010	AUTCP= 10	; 1 = AUTO DISPLAY COUNTS AT END OF FINAL PASS ONLY
000004	H*PEP= 4	; 1 = HOUSEKEEP COUNTS ONLY AT RUN COMMAND
000002	PFLDVB= 2	; 1 = PRINT FIRST BAD BYTE ONLY ON VERIFY
000001	NOCOMP= 1	; 1 = DO NOT PRINT PROG COMPLETED MSG
000004	PFWADR= +4.	;PROGRAM FLAGWORD ADDRESS - 1 WORD
000006	PASCIN= +6.	;PROGRAM'S NUMBER IN ASCII - 1 WORD
000010	PNAME= +8.	;PROGRAM'S NAME IN ASCII - 6 BYTES
000016	PRDIOA= +14.	;ADDRESS OF READ I/O AREA - 1 WORD
000020	PWRIOA= +16.	;ADDRESS OF WRITE I/O AREA - 1 WORD
000022	PSRCST= +18.	;SOURCE STATEMENTS START ADDRESS - 1 WORD
000024	POBJST= +20.	;OBJECT CODE START ADDRESS - 1 WORD
000026	PLNGTH= +22.	;PROG AREA LENGTH (OBJ END MINUS PROG TBL START) - 1 WORD
000030	PTOCNT= +24.	;I/O TIMEOUT COUNT - 1 WORD

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1042	000032	PMDLCD= +26.	;DEV ROUT MODEL # CODE - 1 WORD
1043			
1044	000034	POPNTR= +28.	;CURRENT DEVICE NUMBER POINTER - 1 BYTE
1045			
1046	000035	PCURDV= +29.	;CURRENT DEVICE # - 1 BYTE
1047			
1048	000036	PDNUMS= +30.	;DEVICE NUMBERS - 16 BYTES
1049			
1050	000056	PTEM0= +46.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1051			
1052	000060	PTEM1= +48.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1053			
1054	000062	PTEM2= +50.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1055			
1056	000064	PTEM3= +52.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1057			
1058	000066	PTEM4= +54.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1059			
1060	000070	PTEM5= +56.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1061			
1062	000072	PTEM6= +58.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1063			
1064	000074	PTEM7= +60.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1065			
1066	000076	PTEM8= +62.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1067			
1068	000100	PTEM9= +64.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1069			
1070	000102	PTEM10= +66.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1071			
1072	000104	PTEM11= +68.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1073			
1074	000106	PTEM12= +70.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1075			
1076	000110	PTEM13= +72.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1077			
1078	000112	PTEM14= +74.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1079			
1080	000114	PTEM15= +76.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
1081			
1082	000116	INBR= +78.	;NUMBER OF BYTES TO TRANSFER ON MOVE (NBR) - 1 WORD
1083			
1084	000120	PSRC= +80.	;DATA SOURCE ADDRESS ON MOVE (SRC) - 1 WORD
1085			
1086	000122	PDST= +82.	;DATA DESTINATION ADDRESS ON MOVE (DST) - 1 WORD
1087			
1088	000124	PSTKCT= +84.	;# OF WORDS (X 2) SAVED OFF STACK - 1 WORD
1089			
1090	000126	PSTKSV= +86.	;STACK WORDS STORAGE AREA - 30 WORDS
1091			
1092	000222	PSVREG= +146.	;USER'S R0 THRU R5 REGISTERS STORAGE AREA - 6 WORDS
1093			
1094	000236	PUSRPC= +158.	;USER'S CURRENT PROGRAM COUNTER - 1 WORD
1095			

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1097          ;FOLLOWING ENTRIES (PROIOX THRU PUBMAP) ARE ONLY IN MEM MGMT VERSION
1098          ;(PROIOX= +160. ;18/22 BIT ABSOLUTE ADDRESS OF READ I/O AREA - 2 WORDS)
1099          ;(PROIOV= +164. ;18 BIT VIRTUAL ADDRESS OF READ I/O AREA - 2 WORDS)
1100          ;(PWRIOX= +168. ;18/22 BIT ABSOLUTE ADDRESS OF WRITE I/O AREA - 2 WORDS)
1101          ;(PWRIOV= +172. ;18 BIT VIRTUAL ADDRESS OF WRITE I/O AREA - 2 WORDS)
1102          ;(PUPARS= +176. ;STORAGE AREA FOR USER'S PAR'S 0 THRU 7 - 8 WORDS)
1103          ;(PUPDRS= +192. ;STORAGE AREA FOR USER'S PDR'S 0 THRU 7 - 8 WORDS)
1104          ;(PUBMAP= +208. ;1ST UNIBUS MAP REG 8 AND 8 OF REGS USED - 1 WORD)
1105          ;END OF MEM MGMT ONLY ENTRIES
1106
1107          000240      PFSIZE= +160. ;PROGRAM TABLE SIZE IN BYTES - 1 WORD - NON MEM MGMT
1108          ;(PFSIZE= +210. ;PROGRAM TABLE SIZE IN BYTES - 1 WORD - MEM MGMT VERSION)
1109
1110          000242      PTEND= +162. ;END OF PROGRAM TABLE - NON MEM MGMT VERSION
1111          ;(PTEND= +212. ;END OF PROGRAM TABLE - MEM MGMT VERSION)
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		; DEVICE ROUTINE TABLE	
1123			
1124			
1125			
1126	000116	DRTLTH= 78.	;DEVICE ROUTINE TABLE LENGTH
1127		:	
1128		:	
1129	000000	DEVRSZ= +0.	;DEVICE ROUTINE SIZE IN BYTES - 1 WORD
1130			
1131	000002	DEVFWD= +2.	;DEVICE ROUTINE FLAGWORD - 1 WORD
1132			
1133	000004	DEVIW1= +4.	;DEVICE INTERFACE WORD # 1 - 1 WORD
1134			
1135	000006	DEVIW2= +6.	;DEVICE INTERFACE WORD # 2 - 1 WORD
1136			
1137	000010	DEVIW3= +8.	;DEVICE INTERFACE WORD # 3 - 1 WORD
1138			
1139	000012	DEVIW4= +10.	;DEVICE INTERFACE WORD # 4 - 1 WORD
1140			
1141	000014	DEVIW5= +12.	;DEVICE INTERFACE WORD # 5 - 1 WORD
1142			
1143	000016	DEVIW6= +14.	;DEVICE INTERFACE WORD # 6 - 1 WORD
1144			
1145	000020	DEVIW7= +16.	;DEVICE INTERFACE WORD # 7 - 1 WORD (SIZE)
1146			
1147	000022	DEVIW8= +18.	;DEVICE INTERFACE WORD # 8 - 1 WORD (ERR)
1148			
1149	000024	DEVORA= +20.	;DEVICE REGISTERS ADDRESS - 1 WORD
1150			
1151	000026	DEVIVA= +22.	;DEVICE INTERRUPT VECTOR ADDRESS - 1 WORD
1152			
1153	000030	DEVRRS= +24.	;DEVICE READ PROCESSOR STATUS WORD (BUS REQ) - 1 WORD
1154			
1155	000032	DEVWPS= +26.	;DEVICE WRITE PROC STATUS WORD (BUS REQ) - 1 WORD
1156			
1157	000034	DHKPAD= +28.	;DEVICE ROUT HOUSEKEEPING ROUT REL ENTRY ADR - 1 WORD
1158			
1159	000036	DERPAD= +30.	;DEVICE ROUT REPORT ROUT REL ENTRY ADR - 1 WORD
1160			
1161	000040	DKILAD= +32.	;DEVICE ROUT KILL ROUTINE REL ENTRY ADR - 1 WORD
1162			
1163	000042	DECTAD= +34.	;DEVICE ROUT ERROR COUNTER REL ADR - 1 WORD
1164			
1165	000044	DTOEAD= +36.	;DEVICE ROUT TIMEOUT ERR ROUT REL ENTRY ADR - 1 WORD
1166			
1167	000046	DEVI08= +38.	;DEVICE I/O BUSY BRANCH ADDRESS (CIOBSY) - 1 WORD
1168			
1169	000050	DEVDER= +40.	;DEVICE ERROR BRANCH ADDRESS (CUPGER) - 1 WORD
1170			
1171	000052	DVUPRT= +42.	;USER MODE PRINT BRANCH ADDRESS (ULIST) - 1 WORD
1172			
1173	000054	DVCPRT= +44.	;CMD MODE PRINT BRANCH ADDRESS (CLIST) - 1 WORD
1174			
1175	000056	DEVBTA= +46.	;CONVERT BINARY TO ASCII BR ADR (BINASC) - 1 WORD
1176			
1177	000060	DVBTD= +48.	;CONVERT BINARY TO DECIMAL ASCII BR ADR (BTASLZ) - 1 WORD
1178			

MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
 DTLPA8.P11 FORMATS FOR PROGRAM & DEVICE ROUTINE TABLES

1179	000062	DVPODA= +50.	; CONVERT PACKED DECIMAL TO ASCII BR ADR (DECASC) - 1 WORD
1180			
1181	000064	DVSFMD= +52.	; MPG SYSTEM FLAGWORD ADDRESS (CSYSFW) - 1 WORD
1182			
1183	000066	DVSVEC= +54.	; SET INTERRUPT VECTOR BR ADR (SETVEC) - 1 WORD
1184			
1185	000070	DVCVEC= +56.	; CLEAR INTERRUPT VECTOR BR ADR (CLAVEC) - 1 WORD
1186			
1187	000072	DVTVEC= +58.	; TEST INTERRUPT VECTOR BR ADR (TSTVEC) - 1 WORD
1188			
1189	000074	DVRINT= +60.	; RETURN FROM INTERRUPT BR ADR (RTMINT) - 1 WORD
1190			
1191	000076	DVGETB= +62.	; GET DATA BYTE BR ADR (GETBYT) - 1 WORD
1192			
1193	000100	DVPUTB= +64.	; PUT DATA BYTE BR ADR (PUTBYT) - 1 WORD
1194			
1195	000102	DEVSTP= +66.	; DEVICE ROUT REL SYMBOL TABLE POINTER - 1 WORD
1196			
1197	000104	DEVETP= +68.	; DEVICE ROUT REL ENTRY TABLE POINTER - 1 WORD
1198			
1199	000106	DVPTEP= +70.	; PACK TABLE EXTEN. REL POINTER - 1 WORD
1200			
1201	000110	DVVTEP= +72.	; VECTOR TABLE EXTEN. REL POINTER - 1 WORD
1202			
1203	000112	DVCTEP= +74.	; COMPILER TBL EXTEN. REL POINTER - 1 WORD
1204			
1205	000114	DVIMSP= +76.	; DEVICE INTERFACE WORD SYMBOL TBL REL POINTER - 1 WORD
1206			
1207	000116	DRTEND= +78.	; END OF DEVICE ROUTINE TABLE
1208			
1209			
1210			
1211	000001	.END	

ACTIVE=	100000		DEVIVA=	000086	EOT	001600R	002	PASCIN=	000006	PUSAPC=	000236	
ATTN=	003435R	002	DEVINI=	000004	EOTBYT	001645R	002	PC	=x000007	PUTBYT	000100R	002
AUTON=	000010		DEVING=	000006	ERRMBS	002574R	002	PCURDV=	000035	PHR10R=	000020	
BCHMR	003564R	002	DEVINH=	000010	ERR	000022R	002	PDNUMS=	000036	PSCONS=	120000	
BINASC	000016R	002	DEVINL=	000012	ERRADR	000604R	002	POPNTA=	000034	REGNUM=	000002	
BIT11	000000		DEVINS=	000014	ERRCNT	000574R	002	POST	000122	RENOMG	003463R	
BIT12	010000		DEVINT=	000016	ERRCON	000536R	002	PFB80V=	000002	REPORT	000656R	002
BIT6	000100		DEVIN7=	000020	ERRCS	002512R	002	PFLGMD=	000000	REPTB	001132R	002
BTRASLZ	000060R	002	DEVIN8=	000022	ERRCSI	002520R	002	PTMADR=	000004	RESREC	003104R	002
BUFCLR	001646R	002	DEVIN9=	000024	ERRS	002528R	002	PLNGTH=	000026	RINTEX	003036R	002
BYTCNT	000610R	002	DEVIN0=	000026	ERRS1	002536R	002	PLOT	001306R	RINTV	003014R	002
BYMR	000564R	002	DEVIN1=	000028	ERRS2	002544R	002	PLTEOT	001630R	RPTBAS	001066R	002
CIOPSY	000046R	002	DEVIN2=	000030	ERRS3	002552R	002	PLTENR	001322R	RPTEND	001112R	002
CKSY	000000		DEVIN3=	000032	ERRS4	002560R	002	PLTTOF	001564R	RPTLP	001050R	002
CKJY	000000		DEVIN4=	000034	ERRS5	002568R	002	PNLCO=	000032	RTNINT	000074R	002
CKLTH	000000		DEVIN5=	000036	ERRS6	002576R	002	PNAME	000010	R0	=x000000	
CLIST	000000		DEVIN6=	000038	ERRS7	002584R	002	PNR	000016	R1	=x000001	
CLFEC	000000		DEVIN7=	000040	ERRS8	002592R	002	PNAMEC	003430R	R2	=x000002	
CLFMS	003634R	002	DEVIN8=	000042	ERRS9	002600R	002	POBJST=	000024	R3	=x000003	
CLCOM	001704R	002	DEVIN9=	000044	ERRS0	002608R	002	POPSM=	000002	R4	=x000004	
CLMR	003617R	002	DEVIN0=	000046	ERRS1	002616R	002	PRD10R=	000016	R5	=x000005	
CLX	000000		DEVIN1=	000048	ERRS2	002624R	002	PRINT	003314R	SAVEG	003070R	002
CLTDR	000000		DEVIN2=	000050	ERRS3	002632R	002	PROCTH	002700R	SETDED=	000040	
CLTEAR	000000		DEVIN3=	000052	ERRS4	002640R	002	PRYMH	003430R	SETVEC	000066R	002
CLTINT	000000		DEVIN4=	000054	ERRS5	002648R	002	PRR	000000	SIZE	000020R	002
CLTNUM=	000010		DEVIN5=	000056	ERRS6	002656R	002	PRTX	000426R	SHOBYT	002120R	002
CLTSTH=	000000		DEVIN6=	000058	ERRS7	002664R	002	PRTOK	001766R	SP	=x000006	
CLTSHG	003550R	002	DEVIN7=	000060	ERRS8	002672R	002	PC	000120	SPACE	001424R	002
CLTFR	003775R	002	DEVIN8=	000062	ERRS9	002680R	002	PSXCST=	000012	SPCNT	000620R	002
COUNTS	000564R	002	DEVIN9=	000064	ERRS0	002688R	002	PSTKCT=	000124	SPDATA	000616R	002
CRLF	000000		DEVIN0=	000066	ERRS1	002696R	002	PSTXSV=	000126	SPOPER=	000200	
CSTAT	000000		DEVIN1=	000068	ERRS2	002704R	002	PSVREG=	000222	STHNG	004022R	002
CSYSFM	000000		DEVIN2=	000070	ERRS3	002712R	002	PSMD	000030R	STHUM	004032R	002
CTPRIO=	000000		DEVIN3=	000072	ERRS4	002720R	002	PTEH0	000056	STONER=	100000	
CUPGER	000000		DEVIN4=	000074	ERRS5	002728R	002	PTEH1	000060	STSAOR	002476R	002
CURCHD	000612R	002	DEVIN5=	000076	ERRS6	002736R	002	PTEH10=	000102	STSTAT	003142R	002
CURCNT	000614R	002	DEVIN6=	000078	ERRS7	002744R	002	PTEH11=	000104	SUPTAD	003122R	002
CURMSG	003451R	002	DEVIN7=	000080	ERRS8	002752R	002	PTEH12=	000106	TOF	001514R	002
CYCVL=	002000		DEVIN8=	000082	ERRS9	002760R	002	PTEH13=	000110	TOFEOT	001542R	002
CYPRG=	000000		DEVIN9=	000084	ERRS0	002768R	002	PTEH14=	000112	TOUTER	001152R	002
DATAOR	000606R	002	DEVIN0=	000086	ERRS1	002776R	002	PTEH15=	000114	TSTVEC	000072R	002
DATAER	000576R	002	DEVIN1=	000088	ERRS2	002784R	002	PTEH2	000062	TVECT	003040R	002
DECRSC	000022R	002	DEVIN2=	000090	ERRS3	002792R	002	PTEH3	000064	TVECTX	003066R	002
DECTAD=	000042		DEVIN3=	000092	ERRS4	002800R	002	PTEH4	000066	ULIST	000052R	002
DERPAD=	000036		DEVIN4=	000094	ERRS5	002808R	002	PTEH5	000070	URSTOP=	000002	
DEVBTA=	000056		DEVIN5=	000096	ERRS6	002816R	002	PTEH6	000072	USELUM=	000200	
DEVDER=	000050		DEVIN6=	000098	ERRS7	002824R	002	PTEH7	000074	WAIT	001252R	002
DEVORA=	000024		DEVIN7=	000100	ERRS8	002832R	002	PTEH8	000076	WRCNT	000570R	002
DEVETP=	000104		DEVIN8=	000102	ERRS9	002840R	002	PTEH9	000100	WRCON	001414R	002
DEVFMD=	000002		DEVIN9=	000104	ERRS0	002848R	002	PTEH0	000242	WRITE	001370R	002
DEVID	003160R	002	DEVIN0=	000106	ERRS1	002856R	002	PTLGH=	000242	WTNOT	002040R	002
DEVIOB=	000046		DEVIN1=	000108	ERRS2	002864R	002	PTCNT=	000030	WT410T=	000010	
			DEVIN2=	000110	ERRS3	002872R	002	PTSIZE=	000240	XFRCNT	000602R	002
			DEVIN3=	000112	ERRS4	002880R	002					
			DEVIN4=	000114	ERRS5	002888R	002					
			DEVIN5=	000116	ERRS6	002896R	002					
			DEVIN6=	000118	ERRS7	002904R	002					
			DEVIN7=	000120	ERRS8	002912R	002					
			DEVIN8=	000122	ERRS9	002920R	002					
			DEVIN9=	000124	ERRS0	002928R	002					
			DEVIN0=	000126	ERRS1	002936R	002					
			DEVIN1=	000128	ERRS2	002944R	002					
			DEVIN2=	000130	ERRS3	002952R	002					
			DEVIN3=	000132	ERRS4	002960R	002					
			DEVIN4=	000134	ERRS5	002968R	002					
			DEVIN5=	000136	ERRS6	002976R	002					
			DEVIN6=	000138	ERRS7	002984R	002					
			DEVIN7=	000140	ERRS8	002992R	002					
			DEVIN8=	000142	ERRS9	003000R	002					
			DEVIN9=	000144	ERRS0	003008R	002					
			DEVIN0=	000146	ERRS1	003016R	002					
			DEVIN1=	000148	ERRS2	003024R	002					
			DEVIN2=	000150	ERRS3	003032R	002					
			DEVIN3=	000152	ERRS4	003040R	002					
			DEVIN4=	000154	ERRS5	003048R	002					
			DEVIN5=	000156	ERRS6	003056R	002					
			DEVIN6=	000158	ERRS7	003064R	002					
			DEVIN7=	000160	ERRS8	003072R	002					
			DEVIN8=	000162	ERRS9	003080R	002					
			DEVIN9=	000164	ERRS0	003088R	002					
			DEVIN0=	000166	ERRS1	003096R	002					
			DEVIN1=	000168	ERRS2	003104R	002					
			DEVIN2=	000170	ERRS3	003112R	002					
			DEVIN3=	000172	ERRS4	003120R	002					
			DEVIN4=	000174	ERRS5	003128R	002					
			DEVIN5=	000176	ERRS6	003136R	002					
			DEVIN6=	000178	ERRS7	003144R	002					
			DEVIN7=	000180	ERRS8	003152R	002					
			DEVIN8=	000182	ERRS9	003160R	002					
			DEVIN9=	000184	ERRS0	003168R	002					
			DEVIN0=	000186	ERRS1	003176R	002					
			DEVIN1=	000188	ERRS2	003184R	002					
			DEVIN2=	000190	ERRS3	003192R	002					
			DEVIN3=	000192	ERRS4	003200R	002					
			DEVIN4=	000194	ERRS5	003208R	002					
			DEVIN5=	000196	ERRS6	003216R	002					
			DEVIN6=	000198	ERRS7	003224R	002					
			DEVIN7=	000200	ERRS8	003232R	002					
			DEVIN8=	000202	ERRS9	003240R	002					
			DEVIN9=	000204	ERRS0	003248R	002					
			DEVIN0=	000206	ERRS1	003256R	002					
			DEVIN1=	000208	ERRS2	003264R	002					
			DEVIN2=	000210	ERRS3	003272R	002					
			DEVIN3=	000212	ERRS4	003280R	002					
			DEVIN4=	000214	ERRS5	003288R	002					
			DEVIN5=	000216	ERRS6	003296R	002					
			DEVIN6=	000218	ERRS7	003304R	002					
			DEVIN7=	000220	ERRS8	003312R	002					
			DEVIN8=	000222	ERRS9	003320R	002					
			DEVIN9=	000224	ERRS0	003328R	002					
			DEVIN0=	000226	ERRS1	003336R	002					
			DEVIN1=	000228	ERRS2	003344R	002					
			DEVIN2=	000230	ERRS3	003352R	002					
			DEVIN3=	000232	ERRS4	003360R	002					
			DEVIN4=	000234	ERRS5	003368R	002					
			DEVIN5=	000236	ERRS6	003376R	002					
			DEVIN6=	000238	ERRS7	003384R	002					
			DEVIN7=	000240	ERRS8	003392R	002					
			DEVIN8=	000242	ERRS9	003400R	002					
			DEVIN9=	000244	ERRS0	003408R						

MAINDEC-11-DTLPA-B LP11/LS11/LV11 DEVICE ROUTINE FOR MPG
DTLPAB.P11 SYMBOL TABLE

XXXX = 000000 . = 004120R 002

. ABS.	000000	000
	000000	001
LP11	004120	002

ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

* ,DTLPAB/NL:TOC/DOC=DTLPAB.P11
RUN-TIME: 37.9 SECONDS
RUN-TIME RATIO: 15/11=1.3
CORE USED: 5K (9 PAGES)

DOCUMENT PAGES: 29

E03

Speaker position 8 seconds, 91 mm, 112 inch, 2 1/2 inch, 1 1/2 inch

||||| 222222222233312
67890123456789012 *
||||| 222222222233312