

MPG

MINIMUM SUPPORT (MPG)
MD-11-DTMSA-A

EP-DTMSA-A-DL-A
COPYRIGHT © 1976
FICHE 1 OF 1

NOV 1976
digital
MADE IN U.S.A.

The microfiche strip contains approximately 15 frames. Each frame displays a different view of data, including:

- Tables with multiple columns and rows of text.
- Bar charts with vertical bars of varying heights.
- Line graphs with plotted data points.
- Summary statistics or key figures.

The data is presented in a structured, tabular format, typical of technical or scientific reports from the mid-1970s.

DTMSA-A
MINIMUM SUPPORT DEVICE ROUTINES FOR MPG

.REM %

IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DTMSA-A
 PRODUCT NAME: MINIMUM SUPPORT DEVICE ROUTINES FOR MPG
 DATE: APRIL 1976
 MAINTAINER: DIAGNOSTIC GROUP / SYSTEMS RELIABILITY
 AUTHOR: W. R. GREENE / C. E. HARPER

COPYRIGHT (C) 1976
 DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASS.

THIS SOFTWARE IS FURNISHED UNDER A LICENSE FOR USE ONLY ON A SINGLE COMPUTER SYSTEM AND MAY BE COPIED ONLY WITH THE INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE, OR ANY OTHER COPIES THEREOF, MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY OTHER PERSON EXCEPT FOR USE ON SUCH SYSTEM AND TO ONE WHO AGREES TO THESE LICENSE TERMS. TITLE TO AND OWNERSHIP OF THE SOFTWARE SHALL AT ALL TIMES REMAIN IN DEC.

THE INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT CORPORATION.

DEC ASSUMES NO RESPONSIBILITY FOR USE OR RELIABILITY OF ITS SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DEC.

%

DTMSA-A
MINIMUM SUPPORT DEVICE ROUTINES FOR MPG

CO1

MINDEC-11-DTMSA-A MINIMUM SUPPORT DEVICE ROUTINES FOR MPG
DTMSA.P11 REVISION HISTORY

MACY11 27(732) 24-SEP-76 14:20 PAGE 2

SEQ 0002

11/11/76

.SBTTL REVISION HISTORY

: APR 76 DTMSA-A INITIAL RELEASE

49
50
51
52
53
54
55
56
57
58
59
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104

.SBTTL DEVICE ROUTINE TABLE
.TITLE MAINDEC-11-DTMSA-A MINIMUM SUPPORT DEVICE ROUTINES FOR MPG

:REVISION 'A'

:FILENAME OF "TMSA0.MPG" ON MPG/XXDP MEDIA

:MACY11: DTMSA?,DTMSA?/CRF:SYM/DOC=DTMSA?.P!:
:LNKX11: DTMSA?.MPG/B:0+DTMSA?/E
:PAPER TAPE: PUNCH DTMSA?.MPG/FILE:ELEV

.DSABL GBL

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

000000' 001570
000002' 000260
000004' 000000
000006' 000000
000010' 000000
000012' 000000
000014' 000000
000016' 000000
000020' 000000
000022' 000000
000024' 000000
000026' 000000
000030' 000000
000032' 000000
000034' 000000
000036' 000000
000040' 000000
000042' 000000
000044' 000000
000046' 000000
000050' 000000
000052' 000000
000054' 000000
000056' 000000
000060' 000000
000062' 000000
000064' 000000
000066' 000000
000070' 000000
000072' 000000
000074' 000000
000076' 000000
000100' 000000
000102' 000014
000104' 000000

LOCZ: .WORD PRGEND-
FLAGWD: .WORD SETUP-

SIZE: .WORD
ERR: .WORD
DREGAD: .WORD
IVCTAD: .WORD
RBUSRQ: .WORD
WBUSRQ: .WORD

CIOBSY: .WORD
CUPGER: .WORD
ULIST: .WORD
CLIST: .WORD
BINASC: .WORD
BTASLZ: .WORD
DECASC: .WORD
CSYSFW: .WORD
SETVEC: .WORD
CLRVEC: .WORD
TSTVEC: .WORD
RTNINT: .WORD
GETBYT: .WORD
PUTBYT: .WORD

:DEVICE ROUT SIZE IN BYTES
:DEVICE ROUT FLAGWORD
:INTERFACE WORD # 1 (NOT USED)
:INTERFACE WORD # 2 (NOT USED)
:INTERFACE WORD # 3 (NOT USED)
:INTERFACE WORD # 4 (NOT USED)
:INTERFACE WORD # 5 (NOT USED)
:INTERFACE WORD # 6 (NOT USED)
:INTERFACE WORD # 7 (SIZE) / UNIMAP FLG
:INTERFACE WORD # 8 (ERROR)
:FIRST DEVICE REGISTER ADR
:INTERRUPT VECTOR ADR
:READ INT PROC STATUS WORD
:WRITE INT PROC STATUS WORD
:HOUSEKEEPING ROUT REL ADR
:REPORT ROUT REL ADR
:KILL ROUT REL ADR
:DATA ERROR COUNT ADR
:TIME OUT ERROR ROUT REL ADR
:I/O BUSY BRANCH ADR
:DEVICE ERROR BRANCH ADR
:USER MODE PRINT ROUTINE BRANCH ADR
:CMND MODE PRINT ROUTINE BRANCH ADR
:CONVERT BINARY TO ASCII ROUT BR ADR
:BIN TO ASCII W LEADING 0 BR ADR
:PACKED DECIMAL TO ASCII BR ADR
:MPG SYSTEM FLAGWORD ADR
:SET INT VECT ROUT BR ADR
:CLEAR INT VECTOR ROUT BR ADR
:TEST INT VECTOR ROUT BR ADR
:RETURN FROM INT ROUT BR ADR
:GET DATA BYTE ROUT BR ADR
:PUT DATA BYTE ROUT BR ADR
:ADR OF DEVICE REGISTER NAMES
:ADR OF DEVICE FUNCTIONS

DVREGS-
C

E01

MAINDEC-11-DTMSA-A MINIMUM SUPPORT DEVICE ROUTINES FOR MPG
DTMSAA.P11 DEVICE ROUTINE TABLE

MACY11 27(732) 24-SEP-76 14:20 PAGE 3-1

SEQ 0004

105 000106' 000000
106 000110' 000000
107 000112' 000000
108 000114' 000000
109 000116' 000062

.WORD 0
.WORD 0
.WORD 0
.WORD 0
DVREGS: .BLKW 50.

:ADR OF PACK TBL EXTENSION
:ADR OF MODEL VECTOR TBL EXTEN.
:ADR OF COMPILER TBL EXTEN.
:ADR OF DEV INTERFACE WD SYM TBL
:TABLE MOVED IN HERE!

111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166

.SBTTL TAILOR DEVICE ROUTINE TO SPECIFIC DEVICE

; THIS ROUTINE IS ENTERED FROM MPG'S "LOAD DEVICE ROUTINE" S/R
; AND WILL TAILOR THE DEVICE ROUTINE TABLE TO THE APPLICABLE
; INFORMATION FOR THE DEVICE SPECIFIED IN THE MODEL CODE WORD
; IN THE PROGRAM TABLE. IT WILL ALSO RELOCATE TO THE END OF
; THE DEVICE ROUTINE TABLE. ALL SYMBOLIC NAMES SUPPORTED
; FOR THE DEVICE'S REGISTERS. BEFORE RETURNING TO MPG, THE
; STORAGE AREA FOR THE SIZE OF THE DEVICE ROUTINE WILL BE
; ADJUSTED TO INCLUDE ONLY THE INFORMATION PERTINENT TO THIS
; DEVICE. THIS RESULTS IN DESTROYING THE FOLLOWING CODE AND
; INFORMATION FOR OTHER DEVICES. THESE AREAS ARE THEN USABLE
; FOR OTHER FUNCTIONS SUCH AS SOURCE AND OBJECT CODE.

;JSR R5, SETUP ;ROUTINE CALL

;R3 = PROG TBL ADR

;DESTROYS R0,R1,R2

```

SETUP:  MOV    PC,R1                ;BEGINNING OF TABLES
        ADD    #TBLBGN-.,R1        ;TO R1
        MOV    PC,R2                ;END OF TABLES
        ADD    #TBLEND-.,R2        ;TO R2
        MOV    PMDLC0(R3),R0       ;GET DEVICE'S MDL CODE
        BIC    #6,R0                ;RESET SAVE/FETCH BITS
10$:    TST    (R1)+                ;END OF MDL CODES FOR THIS DE.
        BEQ    20$                  ;BR IF YES
        CMP    -2(R1),R0            ;FOUND MODEL MATCH?
        BEQ    RELOC                ;YES-FILL IN DUMMY TBL
        BR     10$                  ;GO CK FOR NXT CODE
20$:    ADD    (R1),R1                ;POINT R1 AT NEXT TBL
        CMP    R1,R2                ;ANY MORE?
        BNE    10$                  ;YES MORE-KEEP LOOKING
        BR     DUMSET               ;NO MORE-GEN DUMMY
RELOC:  TST    (R1)+                ;BYPASS ANY MORE MDL CODES
        BNE    RELOC
        MOV    (R1)+,R0              ;TBL LNTH TO R0
        MOV    (R1)+,DREGADR        ;UPDATE DEV REG ADDR
        MOV    (R1)+,IVCTADR        ;INTERRUPT VECTOR ADDR
        MOV    (R1)+,RBSRQ          ;READ BUS PRIORITY AND
        MOV    (R1)+,WBSRQ          ;WRITE BUS PRIORITY
        MOV    (R1)+,SIZE           ;STORE UNIBUS MAP USAGE FLAG
        SUB    #12,R0                ;R0 HAS REMAINING LENGTH
        MOV    PC,R2                ;POINT R2
40$:    ADD    #DVREGS-.,R2         ;AT DEV REG NAME TBL
        MOV    (R1)+,(R2)+         ;FILL IN TABLE
        SUB    #2,R0
        BNE    40$
TBLSET: MOV    R2,R1                ;SAVE END POINTER
        MOV    #17777,(R2)+        ;STORE ALL ONES
        MOV    PC,R0
        ADD    #LOCZ-.,R0           ;FIND LOCZ
        SUB    R0,R2                ;STORE DVREND-
        MOV    R2,(R0)+            ;AT LOCZ
    
```

```

000262' 010701
000264' 062701 000210
000270' 010702
000272' 062702 001276
000276' 016300 000032
000302' 042700 000006
000306' 005721
000310' 001404
000312' 026100 177776
000316' 001405
000320' 000772
000322' 061101
000324' 020102
000326' 001367
000330' 000455
000332' 005721
000334' 001376
000336' 012100
000340' 012167 177460
000344' 012167 177456
000350' 012167 177454
000354' 012167 177452
000360' 012167 177434
000364' 162700 000014
000370' 010702
000372' 062702 177524
000376' 012122
000400' 162700 000002
000404' 001374
000406' 010201
000410' 012722 177777
000414' 010700
000416' 062700 177362
000422' 160002
000424' 010220
    
```

GO1

MAINDEC-11-DTMSA-A MINIMUM SUPPORT DEVICE ROUTINES FOR MPG
 DTMSAA.P11 TAILOR DEVICE ROUTINE TO SPECIFIC DEVICE

MACY11 27(732) 24-SEP-76 14:20 PAGE 4-1

SEQ 0006

167	000426'	005010		CLR	(R0)		: CLEAR FLAGWORD
168	000430'	010700		MOV	PC, R0		: POINT R0
169	000432'	062700	177462	ADD	#DVREGS-2-., R0		: AT INTERFACE ADR ENTRY
170	000436'	160001		SUB	R0, R1		: CALC DUMMY INTERFACE TBL ADR
171	000440'	010110		MOV	R1, (R0)		: INSERT
172	000442'	005721		TST	(R1)+		: CALC DUMMY COMPILE TBL ADR
173	000444'	010140		MOV	R1, -(R0)		: INSERT
174	000446'	005721		TST	(R1)+		: CALC DUMMY VECTOR TBL ADR
175	000450'	010140		MOV	R1, -(R0)		: INSERT
176	000452'	005721		TST	(R1)+		
177	000454'	010140		MOV	R1, -(R0)		: INSERT
178	000456'	005721		TST	(R1)+		: CALC DUMMY FUNCT TBL ADR
179	000460'	010140		MOV	R1, -(R0)		: INSERT
180	000462'	000205		RTS	R5		: RETURN TO MPG
181							
182	000464'	010702		DUMSET: MOV	PC, R2		: THIS PATH SHOULD
183	000466'	062702	177430	ADD	#DVREGS-., R2		: NEVER BE TRAVELED.
184	000472'	000745		BR	TBLSET		: BUT WERE READY ANYWAY.

.SBTTL CD11 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

```

186
187
188
189
190
191      000474'
192
193 000474' 021000
194 000476' 000000
195 000500' 000044
196 000502' 172460
197 000504' 000230
198 000506' 000200
199 000510' 000000
200 000512' 000001
201 000514' 042103 052123
202 000520' 000000
203 000522' 042103 041503
204 000526' 000002
205 000530' 042103 040502
206 000534' 000004
207 000536' 042103 041104
208 000542' 000006
209      000544'

```

TBLBGN= .

```

CDBGN: .WORD 21000
        .WORD 0
        .WORD CDEND-
        .WORD 172460
        .WORD 230
        .WORD 200
        .WORD 0
        .WORD 1
        .ASCII /CDST/
        .WORD 0
        .ASCII /CDDC/
        .WORD 2
        .ASCII /CDBA/
        .WORD 4
        .ASCII /CDDB
        .WORD 6

```

CDEND= .

;CD11 MODEL CODE

```

;FIRST DEVICE REGISTER ADR
;INTERRUPT VECTOR ADR
;INT PROC STATUS WORD (BR 4)
;INT PROC STATUS WORD
;UNIBUS MAP USAGE FLAG
;VALID DEVICE REGISTER NAMES &
;THEIR POSITIONS RELATIVE TO
;THE DEVICE REGISTERS BASE ADDRESS.

```


211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231

.SBTTL CR11/CM11 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

000544' 020000
000546' 020020
000550' 000000
000552' 000036
000554' 177160
000556' 000230
000560' 000300
000562' 000000
000564' 000000
000566' 051103 020123
000572' 000000
000574' 051103 030502
000600' 000002
000602' 051103 031102
000606' 000004
000610'

CRBGN: .WORD 20000
.WORD 20020
.WORD 0
.WORD CREND-
.WORD 177160
.WORD 230
.WORD 300
.WORD 0
.WORD 0
.ASCII /CRS /
.WORD 0
.ASCII /CRB1 /
.WORD 2
.ASCII /CRB2 /
.WORD 4
CREND= .

:CR11 MODEL CODE
:CM11 MODEL CODE
:
:FIRST DEVICE REGISTER ADR
:INTERRUPT VECTOR ADR
:INT PROC STATUS WORD (BR 6)
:INT PROC STATUS WORD
:UNIBUS MAP USAGE FLAG
:VALID DEVICE REGISTER NAMES &
:THEIR POSITIONS RELATIVE TO
:THE DEVICE REGISTERS BASE ADDRESS.

233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254

.SBTTL DC11 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

000610' 017000
000612' 000000
000614' 000044
000616' 174000
000620' 000300
000622' 000240
000624' 000000
000626' 000000
000630' 041522 051123
000634' 000000
000636' 041122 043125
000642' 000002
000644' 051524 051103
000650' 000004
000652' 041124 043125
000656' 000006
000660'

DCBGM: .WORD 17000
.WORD 0
.WORD DCEND-
.WORD 174000
.WORD 300
.WORD 240
.WORD 0
.WORD 0
.ASCII /RCSR/
.WORD 0
.ASCII /RBLF/
.WORD 2
.ASCII /TSCR/
.WORD 4
.ASCII /TBUF/
.WORD 6
DCEND= .

;DC11 MODEL CODE
;FIRST DEVICE REGISTER ADR
;INTERRUPT VECTOR ADR
;INT PROC STATUS WORD (BR 5)
;INT PROC STATUS WORD
;UNIBUS MAP USAGE FLAG
;VALID DEVICE REGISTER NAMES &
;THEIR POSITIONS RELATIVE TO
;THE DEVICE REGISTERS BASE ADDRESS.

.SBTTL DN11 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271

000660' 016000
000662' 000000
000664' 000022
000666' 175200
000670' 000300
000672' 000200
000674' 000000
000676' 000000
000700' 041501 020125
000704' 000000
000706'

DNBGN: .WORD 16000
.WORD 0
.WORD DNEND-
.WORD 175200
.WORD 300
.WORD 200
.WORD 0
.WORD 0
.ASCII /ACJ /
.WORD 0
DNEND= .

;DN11 MODEL CODE
;FIRST DEVICE REGISTER ADR
;INTERRUPT VECTOR ADR
;INT PROC STATUS WORD (BR 4)
;INT PROC STATUS WORD
;UNIBUS MAP USAGE FLAG
;VALID DEVICE REGISTER NAMES &
;THEIR POSITIONS RELATIVE TO

.SBTTL KW11 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294

000706' 022000
000710' 000000
000712' 000044
000714' 172540
000716' 000104
000720' 000300
000722' 000000
000724' 000000
000726' 053513 041523
000732' 000000
000734' 053513 051102
000740' 000002
000742' 053513 051103
000746' 000004
000750' 045514 020123
000754' 005006
000756'

KWBGN: .WORD 22000
.WORD 0
.WORD KWEND-
.WORD 172540
.WORD 104
.WORD 300
.WORD 0
.WORD 0
.ASCII /KWSC/
.WORD 0
.ASCII /KWBR/
.WORD 2
.ASCII /KWCR/
.WORD 4
.ASCII /LKS /
.WORD 5006
KWEND= .

;KW11 MODEL CODE
;FIRST DEVICE REGISTER ADR
;INTERRUPT VECTOR ADR
;INT PROC STATUS WORD (BR 6)
;INT PROC STATUS WORD
;UNIBUS MAP USAGE FLAG
;VALID DEVICE REGISTER NAMES &
;THEIR POSITIONS RELATIVE TO
;THE DEVICE REGISTERS BASE ADDRESS.

296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325

.SBTTL RC11 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

000756' 014000
000760' 000000
000762' 000074
000764' 177440
000766' 000210
000770' 000240
000772' 000000
000774' 000001
000776' 041522 040514
001002' 000000
001004' 041522 040504
001010' 000002
001012' 041522 051105
001016' 000004
001020' 041522 051503
001024' 000006
001026' 041522 041527
001032' 000010
001034' 041522 040503
001040' 000012
001042' 041522 047115
001046' 000014
001050' 041522 041104
001054' 000016
001056'

RCBGN: .WORD 14000
.WORD 0
.WORD RCEND-
.WORD 177440
.WORD 210
.WORD 240
.WORD 0
.WORD 1
.ASCII /RCLA/
.WORD 0
.ASCII /RCDA/
.WORD 2
.ASCII /RCER/
.WORD 4
.ASCII /RCCS/
.WORD 6
.ASCII /RCWC/
.WORD 10
.ASCII /RCCA/
.WORD 12
.ASCII /RCMN/
.WORD 14
.ASCII /RCDB/
.WORD 16
RCEND= .

;RC11 MODEL CODE
;FIRST DEVICE REGISTER ADR
;INTERRUPT VECTOR ADR
;INT PROC STATUS WORD (BR 5)
;INT PROC STATUS WORD
;UNIBUS MAP USAGE FLAG
;VALID DEVICE REGISTER NAMES &
;THEIR POSITIONS RELATIVE TO
;THE DEVICE REGISTERS BASE ADDRESS.

.SBTTL RF11 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356

001056' 013000
001060' 000000
001062' 000074
001064' 177460
001066' 000204
001070' 000240
001072' 000000
001074' 000001
001076' 041504 020123
001102' 000000
001104' 041527 020040
001110' 000002
001112' 046503 020101
001116' 000004
001120' 040504 020122
001124' 000006
001126' 040504 020105
001132' 000010
001134' 041104 020122
001140' 000012
001142' 040515 020040
001146' 000014
001150' 042101 020123
001154' 000016
001156'

RFBGN: .WORD 13000
.WORD 0
.WORD RFEND-
.WORD 177460
.WORD 204
.WORD 240
.WORD 0
.WORD 1
.ASCII /DCS /
.WORD 0
.ASCII /WC /
.WORD 2
.ASCII /CMA /
.WORD 4
.ASCII /DAR /
.WORD 6
.ASCII /DAE /
.WORD 10
.ASCII /DBR /
.WORD 12
.ASCII /MA /
.WORD 14
.ASCII /ADS /
.WORD 16
RFEND= .

;RF11 MODEL CODE
;FIRST DEVICE REGISTER ADR
; INTERRUPT VECTOR ADR
; INT PROC STATUS WORD (BR 5)
; INT PROC STATUS WORD
; UNIBUS MAP USAGE FLAG
; VALID DEVICE REGISTER NAMES &
; THEIR POSITIONS RELATIVE TO
; THE DEVICE REGISTERS BASE ADDRESS.

.SBTTL RP11 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395

001156' 015000
001160' 000000
001162' 000124
001164' 176710
001166' 000254
001170' 000240
001172' 000000
001174' 000001
001176' 050122 051504
001202' 000000
001204' 050122 051105
001210' 000002
001212' 050122 051503
001216' 000004
001220' 050122 041527
001224' 000006
001226' 050122 040502
001232' 000010
001234' 050122 040503
001240' 000012
001242' 050122 040504
001246' 000014
001250' 050122 030515
001254' 000016
001256' 050122 031115
001262' 000020
001264' 050122 031515
001270' 000022
001272' 052523 040503
001276' 000024
001300' 044523 047514
001304' 000026
001306'

RPBGN: .WORD 15000
.WORD 0
.WORD RPEND-
.WORD 176710
.WORD 254
.WORD 240
.WORD 0
.WORD 1
.ASCII /RPDS/
.WORD 0
.ASCII /RPER/
.WORD 2
.ASCII /RPCS/
.WORD 4
.ASCII /RPWC/
.WORD 6
.ASCII /RPBA/
.WORD 10
.ASCII /RPCA/
.WORD 12
.ASCII /RPDA/
.WORD 14
.ASCII /RPM1/
.WORD 16
.ASCII /RPM2/
.WORD 20
.ASCII /RPM3/
.WORD 22
.ASCII /SUCA/
.WORD 24
.ASCII /SILO/
.WORD 26
RPEND= .

;RP11 MODEL CODE
;FIRST DEVICE REGISTER ADR
;INTERRUPT VECTOR ADR
;INT PROC STATUS WORD (BP 5)
;INT PROC STATUS WORD
;UNIBUS MAP USAGE FLAG
;VALID DEVICE REGISTER NAMES &
;THEIR POSITIONS RELATIVE TO
;THE DEVICE REGISTERS BASE ADDRESS.

.SBTTL RX11/RX01 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421

001306' 024000
001310' 024020
001312' 000000
001314' 000052
001316' 177170
001320' 000264
001322' 000240
001324' 000000
001326' 000000
001330' 054122 051503
001334' 000000
001336' 054122 041104
001342' 000002
001344' 054122 040524
001350' 000002
001352' 054122 040523
001356' 000002
001360' 054122 051505
001364' 000002
001366'

RXBGN: .WORD 24000
.WORD 24020
.WORD 0
.WORD RXEND-
.WORD 177170
.WORD 264
.WORD 240
.WORD 0
.WORD 0
.ASCII /RXCS/
.WORD 0
.ASCII /RXDB/
.WORD 2
.ASCII /RXTA/
.WORD 2
.ASCII /RXSA/
.WORD 2
.ASCII /RXES
.WORD 2
RXEND= .

:RX11 MODEL CODE
:RX01 MODEL CODE
:
:FIRST DEVICE REGISTER ADR
:INTERRUPT VECTOR ADR
:INT PROC STATUS WORD (BR 5)
:INT PROC STATUS WORD
:UNIBUS MAP USAGE FLAG
:VALID DEVICE REGISTER NAMES &
:THEIR POSITIONS RELATIVE TO
:THE DEVICE REGISTERS BASE ADDRESS

.SBTTL TAIL MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440

001366' 012000
001370' 000000
001372' 000030
001374' 177500
001376' 000260
001400' 000300
001402' 000000
001404' 000000
001406' 040524 051503
001412' 000000
001414' 040524 041104
001420' 000002
001422'

TABGN: .WORD 12000
.WORD 0
.WORD TAEND-
.WORD 177500
.WORD 260
.WORD 300
.WORD 0
.WORD 0
.ASCII /TACS/
.WORD 0
.ASCII /TADB/
.WORD 2
TAEND= .

;TAIL MODEL CODE
;
;FIRST DEVICE REGISTER ADR
;INTERRUPT VECTOR ADR
;INT PROC STATUS WORD (BR 6)
;INT PROC STATUS WORD
;UNIBUS MAP USAGE FLAG
;VALID DEVICE REGISTER NAMES &
;THEIR POSITIONS RELATIVE TO
;THE DEVICE REGISTERS BASE ADDRESS.

.SBTTL TMO2/TUI6 MINIMUM SUPPORT DEVICE ROUTINE INFORMATION

442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487

001422' 023000
001424' 023020
001426' 000000
001430' 000140
001432' 172440
001434' 000224
001436' 000240
001440' 000000
001442' 000000
001444' 052115 030503
001450' 000000
001452' 052115 041527
001456' 000002
001460' 052115 040502
001464' 000004
001466' 052115 041506
001472' 000006
001474' 052115 031103
001500' 000010
001502' 052115 051504
001506' 000012
001510' 052115 051105
001514' 000014
001516' 052115 051501
001522' 000016
001524' 052115 041503
001530' 000020
001532' 052115 041104
001536' 000022
001540' 052115 051115
001544' 000024
001546' 052115 052104
001552' 000026
001554' 052115 047123
001560' 000030
001562' 052115 041524
001566' 000032
001570'

TMBGN: .WORD 23000
.WORD 23020
.WORD 0
.WORD TMEND-
.WORD 172440
.WORD 224
.WORD 240
.WORD 0
.WORD 0
.ASCII /MTC1/
.WORD 0
.ASCII /MTWC/
.WORD 2
.ASCII /MTBA/
.WORD 4
.ASCII /MTFC/
.WORD 6
.ASCII /MTC2/
.WORD 10
.ASCII /MTDS/
.WORD 12
.ASCII /MTER/
.WORD 14
.ASCII /MTAS/
.WORD 16
.ASCII /MTCC/
.WORD 20
.ASCII /MTDB/
.WORD 22
.ASCII /MTMR/
.WORD 24
.ASCII /MTDT/
.WORD 26
.ASCII /MTSN/
.WORD 30
.ASCII /MTTC/
.WORD 32
TMEND= .
TBLEND= .

:TMO2 MODEL CODE
:TUI6 MODEL CODE
:FIRST DEVICE REGISTER ADR
:INTERRUPT VECTOR ADR
:INT PROC STATUS WORD (BF 5)
:INT PROC STATUS WORD
:UNIBUS MAP USAGE FLAG
:VALID DEVICE REGISTER NAMES &
:THEIR POSITIONS RELATIVE TO
:THE DEVICE REGISTERS BASE ADDRESS

489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542

```

.SBTTL FORMATS FOR PROGRAM & DEVICE ROUTINE TABLES
: PROGRAM TABLE FORMAT
PTLGTH= 162. ;PROGRAM TABLE LENGTH - NON MEM MGMNT VERSION OF MPG
;(PTLGTH= 212. ;PROGRAM TABLE LENGTH - MEM MGMNT VERSION OF MPG)
PFLGWD= +0. ;PROGRAM FLAG WORD - 1 WORD
URSTOP= 2 ; 1 = USER HAS STOPPED THIS PROGRAM
ERSTOP= 4 ; 1 = AN ERROR HAS STOPPED THIS PROGRAM
WT4IOT= 10 ; 1 = WAITING FOR I/O TERMINATION
CTPRIO= 20 ; 1 = CONSOLE OR PRINTER I/O IN PROGRESS
SETDED= 40 ; 1 = THIS PROG SET THE PRT DEV DEDICATED FLAG
OCPRES= 100 ; 1 = OBJ CODE IS PRESENT
USEUBM= 200 ; 1 = THIS PROG USES THE UNIBUS MAP (MEM MGMNT ONLY)
ACTIVE= 100000 ; 1 = PROGRAM IS ACTIVE (SPECIFIED FOR EXECUTION)
POPSW= +2. ;PROGRAM'S OPERATION SWITCHES - 1 WORD
STONER= 100000 ; 1 = STOP PROG EXECUTION UPON ERROR
CYCPRG= 40000 ; 1 = CYCLE PROGRAM (ON CURRENT DEVICE)
PRONER= 20000 ; 1 = DO NOT PRINT ON ERROR
BIT12= 10000 ; 0 = NOT USED
BIT11= 4000 ; 0 = NOT USED
CYCDVL= 2000 ; 1 = CYCLE THE DEVICE LIST
GTNXTD= 1000 ; 1 = CYCLE ON SAME DEVICE UPON ERROR
DOERCK= 400 ; 1 = DON'T DO ERROR CHECKING
SPOPER= 200 ; 1 = DEVICE SPECIAL OPERATION
BIT6= 100 ; 0 = NOT USED
DOIOT= 40 ; 1 = DO NOT PERFORM I/O TIMEOUT
AUTORP= 20 ; 1 = DO NOT AUTOMATICALLY DISPLAY COUNTS
AURPEP= 10 ; 1 = AUTO DISPLAY COUNTS AT END OF FINAL PASS ONLY
HSKPEP= 4 ; 1 = HOUSEKEEP COUNTS ONLY AT RUN COMMAND
PFBBOV= 2 ; 1 = PRINT FIRST BAD BYTE ONLY ON VERIFY
NOCCMP= 1 ; 1 = DO NOT PRINT PROG COMPLETED MSG
PFWADR= +4. ;*;PROGRAM FLAGWORD ADDRESS - 1 WORD
PASCIN= +6. ;PROGRAM'S NUMBER IN ASCII - 1 WORD
PNAME= +8. ;PROGRAM'S NAME IN ASCII - 6 BYTES
PRDIA= +14. ;ADDRESS OF READ I/O AREA - 1 WORD
PWRIGA= +16. ;ADDRESS OF WRITE I/O AREA - 1 WORD
PSRCST= +18. ;SOURCE STATEMENTS START ADDRESS - 1 WORD
POBJST= +20. ;OBJECT CODE START ADDRESS - 1 WORD
PLNGTH= +22. ;PROG AREA LENGTH (OBJ END MINUS PROG *BL START) - 1 WORD
PTOCNT= +24. ;I/O TIMEOUT COUNT - 1 WORD
    
```

545	000032	PMDLCD= +26.	;DEV ROUT MODEL # CODE - 1 WORD
546	000034	PDPNTR= +28.	;CURRENT DEVICE NUMBER POINTER - 1 BYTE
547	000035	PCURDV= +29.	;CURRENT DEVICE # - 1 BYTE
548	000036	PDNUMS= +30.	;DEVICE NUMBERS - 16 BYTES
549	000056	PTEM0= +46.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
550	000060	PTEM1= +48.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
551	000062	PTEM2= +50.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
552	000064	PTEM3= +52.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
553	000066	PTEM4= +54.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
554	000070	PTEM5= +56.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
555	000072	PTEM6= +58.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
556	000074	PTEM7= +60.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
557	000076	PTEM8= +62.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
558	000100	PTEM9= +64.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
559	000102	PTEM10= +66.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
560	000104	PTEM11= +68.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
561	000106	PTEM12= +70.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
562	000110	PTEM13= +72.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
563	000112	PTEM14= +74.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
564	000114	PTEM15= +76.	;USER PROGRAM TEMPORARY STORAGE - 1 WORD
565	000116	PNBR= +78.	;NUMBER OF BYTES TO TRANSFER ON MOVE (NBR) - 1 WORD
566	000120	PSRC= +80.	;DATA SOURCE ADDRESS ON MOVE (SRC) - 1 WORD
567	000122	PDST= +82.	;DATA DESTINATION ADDRESS ON MOVE (DST) - 1 WORD
568	000124	PSTKCT= +84.	;# OF WORDS (X 2) SAVED OFF STACK - 1 WORD
569	000126	PSTKSV= +86.	;STACK WORDS STORAGE AREA - 30 WORDS
570	000222	PSVREG= +146.	;USER'S R0 THRU R5 REGISTERS STORAGE AREA - 6 WORDS
571	000236	PJSRPC= +158.	;USER'S CURRENT PROGRAM COUNTER - 1 WORD
572			
573			
574			
575			
576			
577			
578			
579			
580			
581			
582			
583			
584			
585			
586			
587			
588			
589			
590			
591			
592			
593			
594			
595			
596			
597			
598			

600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624

;FOLLOWING ENTRIES (PRDIOX THRU PUBMAP) ARE ONLY IN MEM MGMNT VERSION

;(PRDIOX= +160. ;18/22 BIT ABSOLUTE ADDRESS OF READ I/O AREA - 2 WORDS)

;(PRDIOV= +164. ;18 BIT VIRTUAL ADDRESS OF READ I/O AREA - 2 WORDS)

;(PWRIOX= +168. ;18/22 BIT ABSOLUTE ADDRESS OF WRITE I/O AREA - 2 WORDS)

;(PWRIOV= +172. ;18 BIT VIRTUAL ADDRESS OF WRITE I/O AREA - 2 WORDS)

;(PUPARS= +176. ;STORAGE AREA FOR USER'S PAP'S 0 THRU 7 - 8 WORDS)

;(PUPDRS= +192. ;STORAGE AREA FOR USER'S PDR'S 0 THRU 7 - 8 WORDS)

;(PUBMAP= +208. ;15* UNIBUS MAP REG # AND # OF REGS USED - 1 WORD)

;END OF MEM MGMNT ONLY ENTRIES

000240

PTSIZE= +160. ;PROGRAM TABLE SIZE IN BYTES - 1 WORD - NON MEM MGMNT

;(PTSIZE= +210. ;PROGRAM TABLE SIZE IN BYTES - 1 WORD - MEM MGMNT VERSION)

000242

PTEND= +162. ;END OF PROGRAM TABLE - NON MEM MGMNT VERSION

;(PTEND= +212. ;END OF PROGRAM TABLE - MEM MGMNT VERSION.

```

626           ;      DEVICE ROUTINE TABLE
627
628           000116      DRTLTH= 78.      ;DEVICE ROUTINE TABLE LENGTH
629
630           ;
631           000000      DEVRSZ= +0.      ;DEVICE ROUTINE SIZE IN BYTES - 1 WORD
632
633           000002      DEVFWD= +2.      ;DEVICE ROUTINE FLAGWORD - 1 WORD
634
635           000004      DEVIW1= +4.      ;DEVICE INTERFACE WORD # 1 - 1 WORD
636
637           000006      DEVIW2= +6.      ;DEVICE INTERFACE WORD # 2 - 1 WORD
638
639           000010      DEVIW3= +8.      ;DEVICE INTERFACE WORD # 3 - 1 WORD
640
641           000012      DEVIW4= +10.     ;DEVICE INTERFACE WORD # 4 - 1 WORD
642
643           000014      DEVIW5= +12.     ;DEVICE INTERFACE WORD # 5 - 1 WORD
644
645           000016      DEVIW6= +14.     ;DEVICE INTERFACE WORD # 6 - 1 WORD
646
647           000020      DEVIW7= +16.     ;DEVICE INTERFACE WORD # 7 - 1 WORD (SIZE)
648
649           000022      DEVIW8= +18.     ;DEVICE INTERFACE WORD # 8 - 1 WORD (ERR)
650
651           000024      DEVVRA= +20.     ;DEVICE REGISTERS ADDRESS - 1 WORD
652
653           000026      DEVIVA= +22.     ;DEVICE INTERRUPT VECTOR ADDRESS - 1 WORD
654
655           000030      DEVRPS= +24.     ;DEVICE READ PROCESSOR STATUS WORD (BUS REQ) - 1 WORD
656
657           000032      DEVVPS= +26.     ;DEVICE WRITE PROC STATUS WORD (BUS REQ) - 1 WORD
658
659           000034      DHKPAD= +28.     ;DEVICE ROUT HOUSEKEEPING ROUT REL ENTRY ADR - 1 WORD
660
661           000036      DERPAD= +30.     ;DEVICE ROUT REPORT ROUT REL ENTRY ADR - 1 WORD
662
663           000040      DKILAD= +32.     ;DEVICE ROUT KILL ROUTINE REL ENTRY ADR - 1 WORD
664
665           000042      DECTAD= +34.     ;DEVICE ROUT ERROR COUNTER REL ADR - 1 WORD
666
667           000044      DTOEAD= +36.     ;DEVICE ROUT TIMEOUT ERR ROUT REL ENTRY ADR - 1 WORD
668
669           000046      DEVI0B= +38.     ;DEVICE I/O BUSY BRANCH ADDRESS (CIOBSY) - 1 WORD
670
671           000050      DEVDER= +40.     ;DEVICE ERROR BRANCH ADDRESS (CUPGER) - 1 WORD
672
673           000052      DVUPRT= +42.     ;USER MODE PRINT BRANCH ADDRESS (ULIST) - 1 WORD
674
675           000054      DVCPRN= +44.     ;CMND MODE PRINT BRANCH ADDRESS (CLIST) - 1 WORD
676
677           000056      DEVBTA= +46.     ;CONVERT BINARY TO ASCII BR ADR (BINASC) - 1 WORD
678
679           000060      DVBTDA= +48.     ;CONVERT BINARY TO DECIMAL ASCII BR ADR (BTASL2) - 1 WORD
680
681
682

```

682	000062	DVPDTA= +50.	; CONVERT PACKED DECIMAL TO ASCII BR ADR (DECASC) - 1 WORD
683			
684	000064	DVSFWD= +52.	; MPG SYSTEM FLAGWORD ADDRESS (CSYSFW) - 1 WORD
685			
686	000066	DVSVEC= +54.	; SET INTERRUPT VECTOR BR ADR (SETVEC) - 1 WORD
687			
688	000070	DVCVEC= +56.	; CLEAR INTERRUPT VECTOR BR ADR (CLRVEC) - 1 WORD
689			
690	000072	DVTVEC= +58.	; TEST INTERRUPT VECTOR BR ADR (TSTVEC) - 1 WORD
691			
692	000074	DVRINT= +60.	; RETURN FROM INTERRUPT BR ADR (RTNINT) - 1 WORD
693			
694	000076	DVGETB= +62.	; GET DATA BYTE BR ADR (GETBYT) - 1 WORD
695			
696	000100	DVPUTB= +64.	; PUT DATA BYTE BR ADR (PUTBYT) - 1 WORD
697			
698	000102	DEVSTP= +66.	; DEVICE ROUT REL SYMBOL TABLE POINTER - 1 WORD
699			
700	000104	DEVETP= +68.	; DEVICE ROUT REL ENTRY TABLE POINTER - 1 WORD
701			
702	000106	DVPTEP= +70.	; PACK TABLE EXTEN. REL POINTER - 1 WORD
703			
704	000110	DVVTEP= +72.	; VECTOR TABLE EXTEN. REL POINTER - 1 WORD
705			
706	000112	DVCTEP= +74.	; COMPILER TBL EXTEN. REL POINTER - 1 WORD
707			
708	000114	DVIWSP= +76.	; DEVICE INTERFACE WORD SYMBOL TBL REL POINTER - 1 WORD
709			
710	000116	DRTEND= +78.	; END OF DEVICE ROUTINE TABLE
711			
712	001570	PRGEND= .	
713			
714	000001	.END	

ACTIVE= 100000	DEVIW3= 000010	DVTVEC= 000072	PSRCST= 000022	RPEND = 001306R
AURPEP= 000010	DEVIW4= 000012	DVUPRT= 000052	PSTKCT= 000124	RTNINT 000074R
AUTORP= 000020	DEVIW5= 000014	DVVTPE= 000110	PSTKSV= 000126	RXBGN 001306R
BINASC 000056R	DEVIW6= 000016	ERR 000022R	PSVREG= 000222	RXEND = 001366R
BIT11 = 004000	DEVIW7= 000020	ERSTOP= 000004	PTEM0 = 000056	R0 = %000000
BIT12 = 010000	DEVIW8= 000022	FLAGWD 000002R	PTEM1 = 000060	R1 = %000001
BIT6 = 000100	DEVRS5= 000030	GETBYT 000076R	PTEM10= 000102	R2 = %000002
BTASLZ 000060R	DEVRSZ= 000000	GTNXTD= 001000	PTEM11= 000104	R3 = %000003
COBGN 000474R	DEVSTP= 000102	HSKPEP= 000004	PTEM12= 000106	R4 = %000004
COEND = 000544R	DEVWPS= 000032	IVCTAD 000026R	PTEM13= 000110	R5 = %000005
CIOSY 000046R	DHKPAD= 000034	KWBGN 000706R	PTEM14= 000112	SETDED= 000040
CLIST 000054R	DKILAD= 000040	KWEND = 000756R	PTEM15= 000114	SETUP 000262R
CLRVEC 000070R	DNBGN 000660R	LOCZ 000000R	PTEM2 = 000062	SETVEC 000066R
CRBGN 000544R	DNEND = 000706R	NOCOMP= 000001	PTEM3 = 000064	SIZE 000020R
CREND = 000610R	DOERCK= 000400	OCPRES= 000100	PTEM4 = 000066	SP = %000006
CSYSFW 000064R	DOIOT = 000040	PASCIN= 000006	PTEM5 = 000070	SPOPER= 000200
CTPRIO= 000020	DREGAD 000024R	PC = %000007	PTEM6 = 000072	STONER= 100000
CUPGER 000050R	DRTEND= 000116	PCURDV= 000035	PTEM7 = 000074	TABGN 001366R
CYCDVL= 002000	DRTLTH= 000116	PDNUMS= 000036	PTEM8 = 000076	TAEND = 001422R
CYCPRG= 040000	DTOEAD= 000044	PDPNTR= 000034	PTEM9 = 000100	TBLBGN= 000474R
DCBGN 000610R	DUMSET 000464R	PDST = 000122	PTEND = 000242	TBLEND= 001570R
DCEND = 000660R	DVBTA= 000060	PF880V= 000002	PTLGTH= 000242	TBLSET 000406R
DECASC 000062R	DVCPRT= 000054	PFLGWD= 000000	PTCNT= 000030	TMBGN 001422R
DECTAD= 000042	DVCTEP= 000112	PFWADR= 000004	PTSIZE= 000240	TMEND = 001570R
DERPAD= 000036	DVCVEC= 000070	PLNGTH= 000026	PUSRPC= 000236	TSTVEC 000072R
DEVSTA= 000056	DVGETB= 000076	PMLCD= 000032	PUTBYT 000100R	ULIST 000052R
DEVDER= 000050	DVIWSP= 000114	PNAME = 000010	PWRIOA= 000020	URSTOP= 000002
DEVTRA= 000024	DVPDTA= 000062	PNBR = 000116	RBUSRQ 000030R	USEUBM= 000200
DEVETP= 000104	DVPTEP= 000106	POBJST= 000024	RCBGN 000756R	WBUSRQ 000032R
DEVFWD= 000002	DVPUTB= 000100	POPSW = 000002	RCEND = 001056R	WT4IOT= 000010
DEVI08= 000046	DVREGS 000116R	PRDIOA= 000016	RELOC 000332R	. = 001570R

. ABS. 000000 000
001570 001

ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

* ,DTMSAA/NL:TOC/DOC=DTMSAA.P11
RUN-TIME: 24.4 SECONDS
RUN-TIME RATIO: 39/7=5.5
CORE USED: 5K (9 PAGES)

DOCUMENT PAGES: 23

