

DDDDDDDDDDDD		XXX	XXX	22222222		00000000		CCCCCCCCCCCC	AAAAAAAAAA	
DDDDDDDDDDDD		XXX	XXX	22222222		00000000		CCCCCCCCCCCC	AAAAAAAAAA	
DDDDDDDDDDDD		XXX	XXX	22222222		00000000		CCCCCCCCCCCC	AAAAAAAAAA	
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDD	DDD	XXX	XXX	222	222	000	000	CCC	AAA	AAA
DDDDDDDDDDDD		XXX	XXX	2222222222222222		00000000		CCCCCCCCCCCC	AAAAAAAAAA	
DDDDDDDDDDDD		XXX	XXX	2222222222222222		00000000		CCCCCCCCCCCC	AAAAAAAAAA	
DDDDDDDDDDDD		XXX	XXX	2222222222222222		00000000		CCCCCCCCCCCC	AAAAAAAAAA	

LLL		SSSSSSSSSSSS		TTTTTTTTTTTTTTTT				111
LLL		SSSSSSSSSSSS		TTTTTTTTTTTTTTTT				111
LLL		SSSSSSSSSSSS		TTTTTTTTTTTTTTTT				111
LLL	SSS			TTT				111111
LLL	SSS			TTT				111111
LLL	SSS			TTT				111111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLL	SSS			TTT				111
LLLLLLLLLLLLLLLL		SSSSSSSSSSSS		TTT				111111111
LLLLLLLLLLLLLLLL		SSSSSSSSSSSS		TTT				111111111
LLLLLLLLLLLLLLLL		SSSSSSSSSSSS		TTT				111111111

\*START\* Job DX20CA Req #100 for DEUFEL.TL Date 3-Mar-82 14:29:43 Monitor: 2102 TOPS-20 Development System, TOPS-20 Moni \*START\*  
File KNET:<DEUFEL.TL>DX20CA.LST.1, created: 15-Feb-82 16:05:58, printed: 3-Mar-82 14:32:03  
Job parameters: Request created: 3-Mar-82 14:17:18 Page limit:678 Forms:NORMAL Account:LOW  
File parameters: Copy: 2 of 2 Spacing:SINGLE File format:ASCII Print mode:ASCII

DDDDDDDDDDDD	XXX	XXX	22222222	00000000	CCCCCCCCCCCC	AAAAAAAAAA
DDDDDDDDDDDD	XXX	XXX	22222222	00000000	CCCCCCCCCCCC	AAAAAAAAAA
DDDDDDDDDDDD	XXX	XXX	22222222	00000000	CCCCCCCCCCCC	AAAAAAAAAA
DDD DDD	XXX	XXX	222 222	000 000	CCC	AAA AAA
DDD DDD	XXX	XXX	222 222	000 000	CCC	AAA AAA
DDD DDD	XXX	XXX	222 222	000 000	CCC	AAA AAA
DDD DDD	XXX XXX	XXX	222	000 000000	CCC	AAA AAA
DDD DDD	XXX XXX	XXX	222	000 000000	CCC	AAA AAA
DDD DDD	XXX XXX	XXX	222	000 000000	CCC	AAA AAA
DDD DDD	XXX	222	000 000 000	CCC	AAA AAA	
DDD DDD	XXX	222	000 000 000	CCC	AAA AAA	
DDD DDD	XXX	222	000 000 000	CCC	AAA AAA	
DDD DDD	XXX XXX	222	000000 000	CCC	AAAAAAAAAAAAAAAA	
DDD DDD	XXX XXX	222	000000 000	CCC	AAAAAAAAAAAAAAAA	
DDD DDD	XXX XXX	222	000000 000	CCC	AAAAAAAAAAAAAAAA	
DDD DDD	XXX XXX	222	000 000	CCC	AAA AAA	
DDD DDD	XXX XXX	222	000 000	CCC	AAA AAA	
DDD DDD	XXX XXX	222	000 000	CCC	AAA AAA	
DDDDDDDDDDDD	XXX	XXX	22222222222222	00000000	CCCCCCCCCCCC	AAA AAA
DDDDDDDDDDDD	XXX	XXX	22222222222222	00000000	CCCCCCCCCCCC	AAA AAA
DDDDDDDDDDDD	XXX	XXX	22222222222222	00000000	CCCCCCCCCCCC	AAA AAA

LLL	SSSSSSSSSSSS	TTTTTTTTTTTTTT	111
LLL	SSSSSSSSSSSS	TTTTTTTTTTTTTT	111
LLL	SSSSSSSSSSSS	TTTTTTTTTTTTTT	111
LLL	SSS	TTT	111111
LLL	SSS	TTT	111111
LLL	SSS	TTT	111111
LLL	SSS	TTT	111
LLL	SSS	TTT	111
LLL	SSS	TTT	111
LLL	SSSSSSSSSS	TTT	111
LLL	SSSSSSSSSS	TTT	111
LLL	SSSSSSSSSS	TTT	111
LLL	SSS	TTT	111
LLL	SSS	TTT	111
LLL	SSS	TTT	111
LLL	SSS	TTT	111
LLL	SSS	TTT	111
LLL	SSS	TTT	111
LLLLLLLLLLLLLLLL	SSSSSSSSSSSS	TTT	11111111
LLLLLLLLLLLLLLLL	SSSSSSSSSSSS	TTT	11111111
LLLLLLLLLLLLLLLL	SSSSSSSSSSSS	TTT	11111111

\*START\* Job DX20CA Req #100 for DEUFEL.TL Date 3-Mar-82 14:29:43 Monitor: 2102 TOPS-20 Development System, TOPS-20 Moni \*START\*  
File KNET:<DEUFEL.TL>DX20CA.LST.1, created: 15-Feb-82 16:05:58, printed: 3-Mar-82 14:32:08  
Job parameters: Request created: 3-Mar-82 14:17:18 Page limit:678 Forms:NORMAL Account:LOW  
File parameters: Copy: 2 of 2 Spacing:SINGLE File format:ASCII Print mode:ASCII

```

1          UNIVER DX20CA - DX20 CROSS ASSEMBLER
2          ;EDIT 17
3
4          .DIRECT .NOBIN
5
6          ;*** INITIALIZATION AND END MACROS ***
7
8          LALL
9          IFNDEF %%REL,<%%REL==0> ;ZERO TO PRODUCE IMAGE CODE
10
11         DEFINE .INIT,<
12         SALL
13         IFNDEF %%LALL,<%%LALL==0>          ;;ZERO TO SUPPRESS ALL MACRO EXPANSIONS
14         IFNDEF %PURE,<%PURE==1>          ;;ZERO TO BYPASS ALL PC CHECKS
15         %%ERRC==0
16         %SIZE==3777                        ;;MAXIMUM SIZE OF CONTROL STORE MEMORY
17         IFN %%LALL,<LALL>
18         .DIRECT .XTABM
19         IFE %%REL,<
20             RIM10
21             LOC      0
22         >
23         IFN %%REL,<PHASE 0>
24         BYTE (2)0(18)<VERSION_&D10&176000>!<EDIT&1777>(6)VERSION(10)EDIT          ;;PROGRAM VE
25         RSION, EDIT NUMBER
26         %LOC==1
27         IFE %%LALL,<%%CREP>
28     >
29
30         000000          AC0==0
31         000001          AC1==1
32         000002          AC2==2
33         000003          AC3==3
34         000004          AC4==4
35         000005          AC5==5
36         000006          AC6==6
37         000007          AC7==7
38         000001          MARX==1
39         000002          MAR==2
40         000003          I==3
  
```

```
41          DEFINE %%CREF,<
42          %ERC==0
43          %LOC==1
44          %DEST==0
45          %MA==0
46          %VAL==0
47          %XXX==0
48          %S==0
49          %AC==0
50          %CODE==0
51          %ALUF==0
52          %PAGEV==0
53          %PAGE==0
54          %C==0
55          %CO==0
56          %POS==0
57          %POSS==0
58          %COND==0
59          %1==0
60          %2==0
61          %3==0
62          %4==0
63          %5==0
64          %6==0
65          %7==0
66          %10==0
67          %11==0
68          %12==0
69          %DUMMY==0
70          .XCREF %ERC,%PURE,%SIZE,%LOC,%DEST
71          .XCREF %MA,%VAL,%XXX,%S,%AC
72          .XCREF %CODE,%ALUF,%PAGEV,%PAGE,%C
73          .XCREF %CO,%POS,%POSS,%COND,%DUMMY
74          .XCREF %1,%2,%3,%4,%5
75          .XCREF %6,%7,%10,%11,%12
76          .XCREF %%COMP,%%ACN,%%JMP,%%JUMP,%%ERRC
77          .XCREF %%LALL,%%ERMP,%%LOC,%%LOCB,%%LOCC,%%REL
78          .XCREF %%MOVI,%%VAL,%%MOVA,%%AC,%%DEST
79          .XCREF %%MA,%%OUTP,%%CHAR,%%MAT,%%CREF
80          .XCREF ..END
81          >
```

```

82     DEFINE .MEM,<
83         -1
84         PHASE 0
85     >
86
87     DEFINE ..END(ERS),<
88         LALL
89
90         PRINTX ?ERS ASSEMBLY ERRORS EXIST
91     >
92
93     DEFINE .END(SIZE),<
94         NOSYM
95         IFN %%REL,<
96             DEPHASE
97             SIZE=:-DXMC
98         >
99         RADIX 10
100        IF2 <IFN %%ERRC,<..END \%%ERRC>>
101        LALL
102
103        END
104    >
105
106    DEFINE .LOC(ADR),<
107        %%ERC==0
108        IFN <ADR>&<^-%SIZE>,<%%ERMP ADDRESS "ADR" OUT OF BOUNDS IN .LOC,\.>
109        IFL <<ADR>-.>,<%%ERMP ADDRESS "ADR" LESS THAN CURRENT LOCATION IN .LOC,\.>
110        IFGE <<ADR>-.>,<
111            %LOC==ADR
112            IFE %%REL,<LOC ADR>
113            IFN %%REL,<
114                XLIST
115                BLOCK <<ADR>-.>
116                LIST
117            >
118        >
119        IFN %%ERC,<%%ERRC==%%ERRC+1>
120    >
121
122    DEFINE %%LOC,<
123        %%ERC==0
124        IFN %PURE,<
125            IFN .-%LOC,<%%LOCC \%LOC>
126            IFN %LOC&<^-%SIZE>,<%%LOCB \%LOC>
127            IFN %%ERC,<%%ERRC==%%ERRC+1>
128        >
129        %LOC==.+1
130    >
131
132    DEFINE %%LOCC(ADR),<%%ERM <LOCATION COUNTER CHANGED, SHOULD NOW BE ADR>>
133
134    DEFINE %%LOCB(ADR),<%%ERM LOCATION COUNTER OUT OF BOUNDS - ADR>

```

```
135      DEFINE CI(NAME,DESTIN,MARC),<
136      DEFINE NAME(A1,A2,A3),<
137          IF1 <0>
138          IF2 <
139              %%MOVI DESTIN,MARC,A1,A2,A3,NAME
140          >
141      >
142
143
144      CI NOP,-1,-1^
145      DEFINE NOP(A1,A2,A3),<
146          IF1 <0>
147          IF2 <
148              %%MOVI -1,-1,A1,A2,A3,NOP
149          >
150      >
151
152      ^
153      CI LDBR,1,-1^
154      DEFINE LDBR(A1,A2,A3),<
155          IF1 <0>
156          IF2 <
157              %%MOVI 1,-1,A1,A2,A3,LDBR
158          >
159      >
160
161      ^
162      CI LDMEM,4,-1^
163      DEFINE LDMEM(A1,A2,A3),<
164          IF1 <0>
165          IF2 <
166              %%MOVI 4,-1,A1,A2,A3,LDMEM
167          >
168      >
169
170      ^
171      CI LDMAR,-1,2^
172      DEFINE LDMAR(A1,A2,A3),<
173          IF1 <0>
174          IF2 <
175              %%MOVI -1,2,A1,A2,A3,LDMAR
176          >
177      >
178
179      ^
180      CI LDMARX,-1,1^
181      DEFINE LDMARX(A1,A2,A3),<
182          IF1 <0>
183          IF2 <
184              %%MOVI -1,1,A1,A2,A3,LDMARX
185          >
186      >
187
188      ^
189      CI IMAR,-1,3^
190      DEFINE IMAR(A1,A2,A3),<
191          IF1 <0>
192          IF2 <
193              %%MOVI -1,3,A1,A2,A3,IMAR
194          >
195      >
```

```
190 >
191 ^
192 CI RETURN,7,-1^
193 DEFINE RETURN(A1,A2,A3),<
194     IF1 <0>
195     IF2 <
196         %%MOVI 7,-1,A1,A2,A3,RETURN
197     >
198 >
199 ^
200 CI SHR,6,-1^
201 DEFINE SHR(A1,A2,A3),<
202     IF1 <0>
203     IF2 <
204         %%MOVI 6,-1,A1,A2,A3,SHR
205     >
206 >
207 ^
208
209 DEFINE %%MOVI(DD,AA,ARG1,ARG2,ARG3,NAME),<
210     %%LOC
211     %DEST==DD
212     %MA== AA
213     %ERC== 0
214     %VAL== 0
215     IFNB <ARG1>,<
216         %%VAL ARG1,NAME
217         IFN <%VAL&<^-377>>,<IFN <%VAL!177+1>,<%%ERMP VALUE "ARG1" TOO LARGE IN NAME,
218     \.>>
219 >
220     IFNB <ARG2>,<
221         %XXX==0
222         %%DEST ARG2
223         IFE %XXX,<%MA ARG2>
224         IFE %XXX,<%%ERMP ILLEGAL 2ND ARGUMENT "ARG2" IN NAME,\.>
225 >
226     IFNB <ARG3>,<%%ERMP TOO MANY ARGUMENTS "ARG3" IN NAME,\.>
227     IFL %DEST,<%DEST==0>
228     IFL %MA,<%MA==0>
229     BYTE (2)<.-^D10>&3(18)<%DEST_^D10>!<%MA_8>!<%VAL&377>(3)0(3)%DEST(2)%MA(8)%VAL
230     IFN %ERC,<%%ERRC==%%ERRC+1>
231 >
```

```

232          DEFINE DATI(A1,A2,A3,A4),<
233             IF1 <0>
234             IF2 <
235                 %%LOC
236                 %DEST== -1
237                 %AC==  -1
238                 %MA==  -1
239                 %ERC==  0
240                 %VAL==0
241                 IFB <A1>,<%%ERMP NO INPUT ADDRESS SPECIFIED IN DATI,\.>
242                 IFNB <A1>,<
243                     %XXX==0
244                     %%DEST A1
245                     IFE %XXX,<%%MA A1>
246                     IFE %XXX,<%%AC A1>
247                     IFN %XXX,<%%ERMP "A1" SPECIFIED IN PLACE OF INPUT ADDRESS IN DATI,\.
248                 >
249                     IFE %XXX,<%%VAL A1,DATI>
250                 >
251                 IFN %VAL&<^-37>,<%%ERMP INPUT ADDRESS OF "A1" IS TOO LARGE IN DATI,\.>
252                 %CODE==1!<%VAL_-2&4>
253                 %ALUF==%VAL&17
254                 IFNB <A2>,<
255                     %XXX==0
256                     %%AC A2
257                     IFN %XXX,<%DEST==5>
258                     IFE %XXX,<%%DEST A2>
259                     IFE %XXX,<%%MA A2>
260                     IFE %XXX,<%%OUTP A2,DATI>
261                     IFE %XXX,<%%ERMP ILLEGAL 2ND ARGUMENT "A2" IN DATI,\.>
262                 >
263                 IFNB <A3>,<
264                     %XXX==0
265                     IFL %AC,<%%AC A3>
266                     IFN %XXX,<%DEST==5>
267                     IFE %XXX,<%%DEST A3>
268                     IFE %XXX,<%%MA A3>
269                     IFE %XXX,<%%OUTP A3,DATI>
270                     IFE %XXX,<%%ERMP ILLEGAL 3RD ARGUMENT "A3" IN DATI,\.>
271                 >
272                 IFNB <A4>,<%%ERMP TOO MANY ARGUMENTS "A4" IN DATI,\.>
273                 IFL %DEST,<%DEST==0>
274                 IFL %MA,<%MA==0>
275                 IFL %AC,<%AC==0>
276                 IFE %DEST=7,<%%ERMP DESTINATION "RETURN" ILLEGAL IN DATI,\.>
277                 BYTE (2)<._-^D10>&3(18)<%CODE_-^D13>!<%DEST_-^D10>!<%MA_8>!<%AC_4>!%ALUF(3)%CO
278 DE(3)%DEST(2)%MA(4)%AC(4)%ALUF
279                 IFN %ERC,<%%ERRC==%%ERRC+1>
280             >
281         >

```



```
282 DEFINE CODE (NAME,ALU,DESTIN,COD),<
283 DEFINE NAME (A1,A2,A3,A4),<
284 IF1 <0>
285 IF2 <
286 %%MOVA COD,ALU,DESTIN,A1,A2,A3,A4,NAME
287 >
288 >
289 >
290
291 DEFINE C2 (NAME,ALU),<
292 CODE NAME,ALU,-1,2
293 CODE NAME^R,ALU,5,2
294 >
295
296 C2 ADM,0^
297 CODE ADM,0,-1,2^
298 DEFINE ADM (A1,A2,A3,A4),<
299 IF1 <0>
300 IF2 <
301 %%MOVA 2,0,-1,A1,A2,A3,A4,ADM
302 >
303 >
304 ^
305 CODE ADMR,0,5,2^
306 DEFINE ADMR (A1,A2,A3,A4),<
307 IF1 <0>
308 IF2 <
309 %%MOVA 2,0,5,A1,A2,A3,A4,ADMR
310 >
311 >
312 ^
313 ^
314 C2 ADMC,1^
315 CODE ADMC,1,-1,2^
316 DEFINE ADMC (A1,A2,A3,A4),<
317 IF1 <0>
318 IF2 <
319 %%MOVA 2,1,-1,A1,A2,A3,A4,ADMC
320 >
321 >
322 ^
323 CODE ADMCR,1,5,2^
324 DEFINE ADMCR (A1,A2,A3,A4),<
325 IF1 <0>
326 IF2 <
327 %%MOVA 2,1,5,A1,A2,A3,A4,ADMCR
328 >
329 >
330 ^
331 ^
332 C2 OSMC,2^
333 CODE OSMC,2,-1,2^
334 DEFINE OSMC (A1,A2,A3,A4),<
335 IF1 <0>
336 IF2 <
```

```
337                                     %%MOVA 2,2,-1,A1,A2,A3,A4,OSMC
338                                     >
339                                     ^
340                                     >
341                                     CODE   OSMCR,2,5,2^
342                                     DEFINE  OSMCR (A1,A2,A3,A4),<
343                                     IF1 <0>
344                                     IF2 <
345                                     %%MOVA 2,2,5,A1,A2,A3,A4,OSMCR
346                                     >
347                                     >
348                                     ^
349                                     ^
350                                     CODE   MOVMEM,11,-1,2^
351                                     DEFINE  MOVMEM (A1,A2,A3,A4),<
352                                     IF1 <0>
353                                     IF2 <
354                                     %%MOVA 2,11,-1,A1,A2,A3,A4,MOVMEM
355                                     >
356                                     >
357                                     ^
358                                     C2   LORCM,12^
359                                     CODE   LORCM,12,-1,2^
360                                     DEFINE  LORCM (A1,A2,A3,A4),<
361                                     IF1 <0>
362                                     IF2 <
363                                     %%MOVA 2,12,-1,A1,A2,A3,A4,LORCM
364                                     >
365                                     >
366                                     ^
367                                     CODE   LORCMR,12,5,2^
368                                     DEFINE  LORCMR (A1,A2,A3,A4),<
369                                     IF1 <0>
370                                     IF2 <
371                                     %%MOVA 2,12,5,A1,A2,A3,A4,LORCMR
372                                     >
373                                     >
374                                     ^
375                                     ^
376                                     C2   LANDM,13^
377                                     CODE   LANDM,13,-1,2^
378                                     DEFINE  LANDM (A1,A2,A3,A4),<
379                                     IF1 <0>
380                                     IF2 <
381                                     %%MOVA 2,13,-1,A1,A2,A3,A4,LANDM
382                                     >
383                                     >
384                                     ^
385                                     CODE   LANDMR,13,5,2^
386                                     DEFINE  LANDMR (A1,A2,A3,A4),<
387                                     IF1 <0>
388                                     IF2 <
389                                     %%MOVA 2,13,5,A1,A2,A3,A4,LANDMR
390                                     >
391                                     >
```

```
392      ^
393      ^
394      C2      LORM,14^
395      CODE      LORM,14,-1,2^
396      DEFINE    LORM (A1,A2,A3,A4),<
397              IF1 <0>
398              IF2 <
399                  %%MOVA 2,14,-1,A1,A2,A3,A4,LORM
400              >
401      >
402      ^
403      CODE      LORMR,14,5,2^
404      DEFINE    LORMR (A1,A2,A3,A4),<
405              IF1 <0>
406              IF2 <
407                  %%MOVA 2,14,5,A1,A2,A3,A4,LORMR
408              >
409      >
410      ^
411      ^
412      C2      LXORM,15^
413      CODE      LXORM,15,-1,2^
414      DEFINE    LXORM (A1,A2,A3,A4),<
415              IF1 <0>
416              IF2 <
417                  %%MOVA 2,15,-1,A1,A2,A3,A4,LXORM
418              >
419      >
420      ^
421      CODE      LXORMR,15,5,2^
422      DEFINE    LXORMR (A1,A2,A3,A4),<
423              IF1 <0>
424              IF2 <
425                  %%MOVA 2,15,5,A1,A2,A3,A4,LXORMR
426              >
427      >
428      ^
429      ^
430      C2      TSM,16^
431      CODE      TSM,16,-1,2^
432      DEFINE    TSM (A1,A2,A3,A4),<
433              IF1 <0>
434              IF2 <
435                  %%MOVA 2,16,-1,A1,A2,A3,A4,TSM
436              >
437      >
438      ^
439      CODE      TSMR,16,5,2^
440      DEFINE    TSMR (A1,A2,A3,A4),<
441              IF1 <0>
442              IF2 <
443                  %%MOVA 2,16,5,A1,A2,A3,A4,TSMR
444              >
445      >
446      ^
```

```

447
448      ^
449      C2      OSM,17^
450      CODE    OSM,17,-1,2^
451      DEFINE  OSM (A1,A2,A3,A4),<
452              IF1 <0>
453              IF2 <
454                  %%MOVA 2,17,-1,A1,A2,A3,A4,OSM
455              >
456      ^
457      CODE    OSMR,17,5,2^
458      DEFINE  OSMR (A1,A2,A3,A4),<
459              IF1 <0>
460              IF2 <
461                  %%MOVA 2,17,5,A1,A2,A3,A4,OSMR
462              >
463      ^
464      ^
465      ^
466      DEFINE  C3      (NAME,ALU),<
467      CODE    NAME,ALU,-1,3
468      CODE    NAME^R,ALU,5,3
469      >
470
471
472      C3      ADB,0^
473      CODE    ADB,0,-1,3^
474      DEFINE  ADB (A1,A2,A3,A4),<
475              IF1 <0>
476              IF2 <
477                  %%MOVA 3,0,-1,A1,A2,A3,A4,ADB
478              >
479      ^
480      ^
481      CODE    ADBR,0,5,3^
482      DEFINE  ADBR (A1,A2,A3,A4),<
483              IF1 <0>
484              IF2 <
485                  %%MOVA 3,0,5,A1,A2,A3,A4,ADBR
486              >
487      ^
488      ^
489      ^
490      C3      ADBC,1^
491      CODE    ADBC,1,-1,3^
492      DEFINE  ADBC (A1,A2,A3,A4),<
493              IF1 <0>
494              IF2 <
495                  %%MOVA 3,1,-1,A1,A2,A3,A4,ADBC
496              >
497      ^
498      ^
499      CODE    ADBCR,1,5,3^
500      DEFINE  ADBCR (A1,A2,A3,A4),<
501              IF1 <0>

```

```
502                                     IF2 <
503                                     %%MOVA 3,1,5,A1,A2,A3,A4,ADBCR
504                                     >
505                                     >
506                                     ^
507                                     ^
508 C3 OSBC,2^
509 CODE OSBC,2,-1,3^
510 DEFINE OSBC (A1,A2,A3,A4),<
511 IF1 <0>
512 IF2 <
513                                     %%MOVA 3,2,-1,A1,A2,A3,A4,OSBC
514                                     >
515                                     >
516                                     ^
517 CODE OSBCR,2,5,3^
518 DEFINE OSBCR (A1,A2,A3,A4),<
519 IF1 <0>
520 IF2 <
521                                     %%MOVA 3,2,5,A1,A2,A3,A4,OSBCR
522                                     >
523                                     >
524                                     ^
525                                     ^
526 C3 INC,3^
527 CODE INC,3,-1,3^
528 DEFINE INC (A1,A2,A3,A4),<
529 IF1 <0>
530 IF2 <
531                                     %%MOVA 3,3,-1,A1,A2,A3,A4,INC
532                                     >
533                                     >
534                                     ^
535 CODE INCR,3,5,3^
536 DEFINE INCR (A1,A2,A3,A4),<
537 IF1 <0>
538 IF2 <
539                                     %%MOVA 3,3,5,A1,A2,A3,A4,INCR
540                                     >
541                                     >
542                                     ^
543                                     ^
544 C3 ADC,4^
545 CODE ADC,4,-1,3^
546 DEFINE ADC (A1,A2,A3,A4),<
547 IF1 <0>
548 IF2 <
549                                     %%MOVA 3,4,-1,A1,A2,A3,A4,ADC
550                                     >
551                                     >
552                                     ^
553 CODE ADCR,4,5,3^
554 DEFINE ADCR (A1,A2,A3,A4),<
555 IF1 <0>
556 IF2 <
```



```
612 >
613 >
614 ^
615 ^
616 C3 MOV,10^
617 CODE MOV,10,-1,3^
618 DEFINE MOV (A1,A2,A3,A4),<
619 IF1 <0>
620 IF2 <
621 %%MOVA 3,10,-1,A1,A2,A3,A4,MOV
622 >
623 >
624 ^
625 CODE MOVR,10,5,3^
626 DEFINE MOVR (A1,A2,A3,A4),<
627 IF1 <0>
628 IF2 <
629 %%MOVA 3,10,5,A1,A2,A3,A4,MOVR
630 >
631 >
632 ^
633 ^
634 CODE MOV,11,-1,3^
635 DEFINE MOV (A1,A2,A3,A4),<
636 IF1 <0>
637 IF2 <
638 %%MOVA 3,11,-1,A1,A2,A3,A4,MOV
639 >
640 >
641 ^
642 C3 LORCB,12^
643 CODE LORCB,12,-1,3^
644 DEFINE LORCB (A1,A2,A3,A4),<
645 IF1 <0>
646 IF2 <
647 %%MOVA 3,12,-1,A1,A2,A3,A4,LORCB
648 >
649 >
650 ^
651 CODE LORCB,12,5,3^
652 DEFINE LORCB (A1,A2,A3,A4),<
653 IF1 <0>
654 IF2 <
655 %%MOVA 3,12,5,A1,A2,A3,A4,LORCB
656 >
657 >
658 ^
659 ^
660 C3 LANDB,13^
661 CODE LANDB,13,-1,3^
662 DEFINE LANDB (A1,A2,A3,A4),<
663 IF1 <0>
664 IF2 <
665 %%MOVA 3,13,-1,A1,A2,A3,A4,LANDB
666 >
```

```
667 >
668 ^
669 CODE LANDBR,13,5,3^
670 DEFINE LANDBR (A1,A2,A3,A4),<
671 IF1 <0>
672 IF2 <
673 %%MOVA 3,13,5,A1,A2,A3,A4,LANDBR
674 >
675 >
676 ^
677 ^
678 C3 LORB,14^
679 CODE LORB,14,-1,3^
680 DEFINE LORB (A1,A2,A3,A4),<
681 IF1 <0>
682 IF2 <
683 %%MOVA 3,14,-1,A1,A2,A3,A4,LORB
684 >
685 >
686 ^
687 CODE LORBR,14,5,3^
688 DEFINE LORBR (A1,A2,A3,A4),<
689 IF1 <0>
690 IF2 <
691 %%MOVA 3,14,5,A1,A2,A3,A4,LORBR
692 >
693 >
694 ^
695 ^
696 C3 LXORB,15^
697 CODE LXORB,15,-1,3^
698 DEFINE LXORB (A1,A2,A3,A4),<
699 IF1 <0>
700 IF2 <
701 %%MOVA 3,15,-1,A1,A2,A3,A4,LXORB
702 >
703 >
704 ^
705 CODE LXORBR,15,5,3^
706 DEFINE LXORBR (A1,A2,A3,A4),<
707 IF1 <0>
708 IF2 <
709 %%MOVA 3,15,5,A1,A2,A3,A4,LXORBR
710 >
711 >
712 ^
713 ^
714 C3 TSB,16^
715 CODE TSB,16,-1,3^
716 DEFINE TSB (A1,A2,A3,A4),<
717 IF1 <0>
718 IF2 <
719 %%MOVA 3,16,-1,A1,A2,A3,A4,TSB
720 >
721 >
```



```
722      ^
723      CODE   TSBR,16,5,3^
724      DEFINE TSBR (A1,A2,A3,A4),<
725          IF1 <0>
726          IF2 <
727              %%MOVA 3,16,5,A1,A2,A3,A4,TSBR
728          >
729      >
730      ^
731      ^
732      C3     OSB,17^
733      CODE   OSB,17,-1,3^
734      DEFINE OSB (A1,A2,A3,A4),<
735          IF1 <0>
736          IF2 <
737              %%MOVA 3,17,-1,A1,A2,A3,A4,OSB
738          >
739      >
740      ^
741      CODE   OSBR,17,5,3^
742      DEFINE OSBR (A1,A2,A3,A4),<
743          IF1 <0>
744          IF2 <
745              %%MOVA 3,17,5,A1,A2,A3,A4,OSBR
746          >
747      >
748      ^
749      ^
```

```

750          DEFINE %%MOVA (CC,AA,DD,ARG1,ARG2,ARG3,ARG4,NAME),<
751          %%LOC
752          %CODE==CC                ;;INSTRUCTION CODE
753          %ALUF==AA                ;;ALU FUNCTION
754          %DEST==DD                ;;DESTINATION
755          %AC== -1                 ;;AC ADDRESS
756          %MA== -1                 ;;MA CONTROL
757          %ERC== 0                 ;;ERROR FLAG
758          IFNB <ARG1>,<
759              %XXX==0
760              %%AC ARG1
761              IFE %XXX,<IFN %ALUF-11,<%AC==0>>
762              IFN %XXX,<IFE %ALUF-11,<%DEST==5>>
763              IFE %XXX,<%%DEST ARG1>
764              IFE %XXX,<%%MA ARG1>
765              IFE %XXX,<%%OUTP ARG1,NAME>
766              IFE %XXX,<%%ERMP ILLEGAL 1ST ARGUMENT "ARG1" IN NAME,\.>
767          >
768          IFNB <ARG2>,<
769              %XXX==0
770              %%DEST ARG2
771              IFE %XXX,<%%MA ARG2>
772              IFE %XXX,<%%OUTP ARG2,NAME>
773              IFE %XXX,<%%ERMP ILLEGAL 2ND ARGUMENT "ARG2" IN NAME,\.>
774          >
775          IFNB <ARG3>,<
776              %XXX==0
777              %%DEST ARG3
778              IFE %XXX,<%%MA ARG3>
779              IFE %XXX,<%%OUTP ARG3,NAME>
780              IFE %XXX,<%%ERMP ILLEGAL 3RD ARGUMENT "ARG3" IN NAME,\.>
781          >
782          IFNB <ARG4>,<%%ERMP TOO MANY ARGUMENTS "ARG4" IN NAME,\.>
783          IFL %DEST,<%DEST==0>
784          IFL %MA,<%MA==0>
785          IFL %AC,<%AC==0>
786          BYTE (2)<._-^D10>&3(18)<%CODE_^D13>!<%DEST_^D10>!<%MA_8>!<%AC_4>!%ALUF(3)%CODE(3)%DE
787          ST(2)%MA(4)%AC(4)%ALUF
788          IFN %ERC,<%%ERRC==%%ERRC+1>
789          >

```

```
790 DEFINE %%AC(ARG),<
791 IFIDN <ARG><AC0>,<%AC==0>
792 IFIDN <ARG><AC1>,<%AC==1>
793 IFIDN <ARG><AC2>,<%AC==2>
794 IFIDN <ARG><AC3>,<%AC==3>
795 IFIDN <ARG><AC4>,<%AC==4>
796 IFIDN <ARG><AC5>,<%AC==5>
797 IFIDN <ARG><AC6>,<%AC==6>
798 IFIDN <ARG><AC7>,<%AC==7>
799 IFGE %AC,<
800 %XXX== -1
801 %DUMMY==ARG
802 >
803 >
804
805 DEFINE %%DEST(ARG),<
806 IFL %DEST,<
807 IFIDN <ARG><BR>,<%DEST==1>
808 IFIDN <ARG><MEM>,<%DEST==4>
809 IFIDN <ARG><BRSR>,<%DEST==6>
810 IFIDN <ARG><RETURN>,<%DEST==7>
811 IFGE %DEST,<
812 %XXX== -1
813 >
814 >
815 >
816
817 DEFINE %%MA(ARG),<
818 IFL %MA,<
819 IFIDN <ARG><MARX>,<%MA==1>
820 IFIDN <ARG><MAR>,<%MA==2>
821 IFIDN <ARG><I>,<%MA==3>
822 IFGE %MA,<
823 %XXX== -1
824 %DUMMY==ARG
825 >
826 >
827 >
828
829 DEFINE %%OUTP(ARG,NAME),<
830 IFL %DEST,<
831 %%VAL ARG,NAME
832 IFE %VAL<^-37>,<
833 IFGE %AC,<%ERMP BOTH AC AND OUTPUT ADDRESSES SPECIFIED IN NAME,\.>
834 %AC==%VAL&17
835 %DEST==2!<%VAL_-4&1>
836 %XXX== -1
837 >
838 >
839 >
```

```
840          DEFINE %%ERM(MSG),<
841              IFE %%ERC,<LALL
842
843          PRINTX ???????????? MSG
844              IFE %%LALL,<SALL>
845              %%ERC== -1
846              >
847          >
848
849          DEFINE %%ERMP(MSG,ADR),<
850              %%ERM MSG INST AT PC ADR
851          >
852
853          DEFINE %%VAL(ARG,NAME),<
854              %S==0
855              IRPC ARG,<
856                  IFE "ARG"="S",<%S==1>
857                  IFE "ARG"="*",<%S==1>
858                  IFGE "ARG"="A",<IFLE "ARG"="Z",<%S==1>>
859                  IFN <"ARG"=".">,<STOPI>
860              >
861              IFE %S,<%VAL==ARG>
862              IFN %S,<
863                  IFDEF ARG,<%VAL==ARG>
864                  IFNDEF ARG,<
865                      %%ERMP UNDEFINED VALUE "ARG" IN NAME,\.
866                      %VAL==0
867                  >
868              >
869          >
```

```
870      DEFINE J1(NAME,COND),<
871          DEFINE NAME(A1,A2,A3),<
872              IF1 <0>
873              IF2 <
874                  %%JMP COND,A1,A2,A3,NAME
875              >
876          >
877      >
878
879      J1      JMP,0^
880          DEFINE JMP(A1,A2,A3),<
881              IF1 <0>
882              IF2 <
883                  %%JMP 0,A1,A2,A3,JMP
884              >
885          >
886      ^
887      J1      JMPI,1^
888          DEFINE JMPI(A1,A2,A3),<
889              IF1 <0>
890              IF2 <
891                  %%JMP 1,A1,A2,A3,JMPI
892              >
893          >
894      ^
895      J1      JMPB0,2^
896          DEFINE JMPB0(A1,A2,A3),<
897              IF1 <0>
898              IF2 <
899                  %%JMP 2,A1,A2,A3,JMPB0
900              >
901          >
902      ^
903      J1      JMPB4,3^
904          DEFINE JMPB4(A1,A2,A3),<
905              IF1 <0>
906              IF2 <
907                  %%JMP 3,A1,A2,A3,JMPB4
908              >
909          >
910      ^
911      J1      JMPB7,4^
912          DEFINE JMPB7(A1,A2,A3),<
913              IF1 <0>
914              IF2 <
915                  %%JMP 4,A1,A2,A3,JMPB7
916              >
917          >
918      ^
919      J1      JMPC,5^
920          DEFINE JMPC(A1,A2,A3),<
921              IF1 <0>
922              IF2 <
923                  %%JMP 5,A1,A2,A3,JMPC
924              >
```

```
925 >
926 ^
927 J1 JMPZ,6^
928 DEFINE JMPZ(A1,A2,A3),<
929 IF1 <0>
930 IF2 <
931 %%JMP 6,A1,A2,A3,JMPZ
932 >
933 >
934 ^
935 J1 JMPSUB,7^
936 DEFINE JMPSUB(A1,A2,A3),<
937 IF1 <0>
938 IF2 <
939 %%JMP 7,A1,A2,A3,JMPSUB
940 >
941 >
942 ^
943 DEFINE %%CHAR(CHAR,COUNT),<
944 %'COUNT=="CHAR"
945 %C==%C+1
946 >
947 >
948 DEFINE %%MAT(CHAR,COUNT),<
949 IFN <%'COUNT="CHAR">,<
950 %CO==1
951 STOPI
952 >
953 >
954 >
955 >
```

```
956         DEFINE %%COMP(M,V),<
957             %CO==0
958             %POSS==%POS
959             IRPC M,<
960                 IFIDN <M><.,>,<IFN <%C-%POSS>,<%CO==1>>
961                 IFDIF <M><.,>,<%%MAT M,\%POSS>
962                 %POSS==%POSS+1
963             >
964             IFE %CO,<
965                 %POS==%POSS
966                 IFNB <V>,<%ALUF==V>
967             >
968         >
969
970         DEFINE %%ACN(ARG,COUNT,NAME),<
971             IFE <%'COUNT&370="0">,<
972                 %AC==%'COUNT&7
973                 %POS==%POS+1
974             >
975             IFN <%'COUNT&370="0">,<
976                 %%ERMP ILLEGAL AC SPECIFICATION "ARG" IN NAME,\.
977                 %CO==1
978             >
979         >
```

```

980          DEFINE %%JMP(CC,ARG1,ARG2,ARG3,NAME),<
981          %%LOC
982          %%ERC==0
983          %%COND==CC
984          %%C==0
985          %%1==0
986          %%2==0
987          %%3==0
988          %%4==0
989          %%5==0
990          %%6==0
991          %%7==0
992          %%10==0
993          %%11==0
994          %%12==0
995          IFNB <ARG1>,<
996              IRPC ARG1,<
997                  IFN %%C,<%%CHAR ARG1,\%C>
998                  IFE %%C,<
999                      IFIDN <ARG1><@>,<%%C==1>
1000                      IFDIF <ARG1><@>,<STOPI>
1001              >
1002          >
1003          IFE %%C,<
1004              %%VAL ARG1,NAME
1005              IFN <%%VAL&<^-%%SIZE>>,<%%ERMP ADDRESS "ARG1" OUT OF BOUNDS IN NAME,\.
1006          >
1007              IFN %%PURE,<IFN <<%%VAL&6000>=<. &6000>>,<%%ERMP ADDRESS "ARG1" OUT OF
1008          CURRENT SECTION IN NAME,\.>>
1009              IFNB <ARG2>,<%%ERMP TOO MANY ARGUMENTS "ARG2" IN NAME,\.>
1010              BYTE (2)<._-^D10>&3(18)<4_-^D13>!<%%COND_^D10>!<%%VAL&1777>(3)4(3)&COND
1011          (10)&VAL
1012          >
1013          IFN %%C,<
1014              %%AC==1
1015              %%PAGE==1
1016              %%ALUF==1
1017              %%POS==1
1018              %%COMP 2*AC
1019              IFE %%CO,<
1020                  %%ACN ARG1,\%POSS,NAME
1021                  %%COMP .,25
1022                  IFL %%ALUF,<%%COMP +C.,26>
1023                  IFL %%ALUF,<%%ALUF==2>
1024          >
1025              IFE %%ALUF+1,<%%COMP MEM.,11>
1026              IFE %%ALUF+1,<%%COMP BR.,31>
1027              %%CO==1
1028              IFE %%ALUF+1,<%%COMP AC>
1029              IFE %%CO,<
1030                  %%ACN ARG1,\%POSS,NAME
1031                  %%COMP .,30
1032                  IFL %%ALUF,<%%COMP +1.,23>
1033                  IFL %%ALUF,<%%COMP +C.,24>
1034                  IFL %%ALUF,<%%COMP +CMEM.,17>
    
```



```
1035 IFL %ALUF,<%%COMP +CMEM+C.,2>
1036 IFL %ALUF,<%%COMP +CBR.,37>
1037 IFL %ALUF,<%%COMP +CBR+C.,22>
1038 IFL %ALUF,<%%COMP +MEM.,0>
1039 IFL %ALUF,<%%COMP +MEM+C.,1>
1040 IFL %ALUF,<%%COMP +BR.,20>
1041 IFL %ALUF,<%%COMP +BR+C.,21>
1042 IFL %ALUF,<%%COMP -1.,27>
1043 IFL %ALUF,<%%COMP -MEM.,16>
1044 IFL %ALUF,<%%COMP -BR.,36>
1045 IFL %ALUF,<%%COMP !CMEM.,12>
1046 IFL %ALUF,<%%COMP !CBR.,32>
1047 IFL %ALUF,<%%COMP !MEM.,14>
1048 IFL %ALUF,<%%COMP !BR.,34>
1049 IFL %ALUF,<%%COMP ^!MEM.,15>
1050 IFL %ALUF,<%%COMP ^!BR.,35>
1051 IFL %ALUF,<%%COMP &MEM.,13>
1052 IFL %ALUF,<%%COMP &BR.,33>
1053 >
1054 IFL %ALUF,<
1055 %%ERMP ILLEGAL 1ST ARGUMENT "ARG1" IN NAME,\.
1056 %ALUF==0
1057 >
1058 %CODE==6!<%ALUF_-4>
1059 %ALUF==%ALUF&17
1060 IFNB <ARG2>,<
1061 %%VAL ARG2,NAME
1062 IFN %VAL&<^-%SIZE>,<%%ERMP ADDRESS "ARG2" OUT OF BOUNDS IN N
1063 AME,\.>
1064 >
1065 IFB <ARG2>,<%VAL==.>
1066 %PAGE==<%VAL&1400>_-8
1067 IFE <%ALUF-11>,<%AC==10!<%VAL&6000>_-^D10>
1068 IFN %PURE,<IFN <%ALUF-11>,<IFN <<%VAL&6000>-<.&6000>>,<
1069 %%ERMP ADDRESS "ARG2" OUT OF CURRENT SECTION IN NAME,\.>>
1070 >
1071 IFNB <ARG3>,<%%ERMP TOO MANY ARGUMENTS "ARG3" IN NAME,\.>
1072 IFL %AC,<%AC==0>
1073 BYTE (2)<._-^D10>&3(18)<%CODE_-^D13>!<%COND_-^D10>!<%PAGE_-8>!<%AC_-4>!%
1074 ALUF(3)%CODE(3)%COND(2)%PAGE(4)%AC(4)%ALUF
1075 >
1076 >
1077 IFB <ARG1>,<
1078 %%ERMP NO ADDRESS SPECIFIED IN NAME,\.
1079 BYTE (2)<._-^D10>&3(18)<4_-^D13>(3)4(3)0(10)0
1080 >
1081 IFN %ERC,<%%ERRC==%%ERRC+1>
1082 >
```

```

1083      DEFINE J2(NAME,INST),<
1084      DEFINE NAME(A1,A2),<
1085          IF1 < 0
1086          0
1087      >
1088          IF2 <
1089              %%JUMP INST,A1,A2,NAME
1090      >
1091  >
1092
1093
1094  J2     JUMP,JMP^
1095      DEFINE JUMP(A1,A2),<
1096          IF1 < 0
1097          0
1098      >
1099          IF2 <
1100              %%JUMP JMP,A1,A2,JUMP
1101      >
1102  >
1103
1104  J2     JUMPI,JMPI^
1105      DEFINE JUMPI(A1,A2),<
1106          IF1 < 0
1107          0
1108      >
1109          IF2 <
1110              %%JUMP JMPI,A1,A2,JUMPI
1111      >
1112  >
1113
1114  J2     JUMPC,JMPC^
1115      DEFINE JUMPC(A1,A2),<
1116          IF1 < 0
1117          0
1118      >
1119          IF2 <
1120              %%JUMP JMPC,A1,A2,JUMPC
1121      >
1122  >
1123
1124  J2     GOSUB,JMPSUB^
1125      DEFINE GOSUB(A1,A2),<
1126          IF1 < 0
1127          0
1128      >
1129          IF2 <
1130              %%JUMP JMPSUB,A1,A2,GOSUB
1131      >
1132  >
1133
1134
1135      DEFINE %%JUMP(INST,ADR,NADR,NAME),<
1136          %ERC==0
1137          %%VAL ADR,NAME

```

```
1138 IFN %VAL&<^-%SIZE>,<%%ERMP ADDRESS "ADR" OUT OF BOUNDS IN NAME,\.>  
1139 IFNB <NADR>,<%%ERMP TOO MANY ARGUMENTS "NADR" IN NAME,\.>  
1140 IFN %ERC,<%%ERRC==%%ERRC+1>  
1141 %PAGEV==%VAL&%SIZE  
1142 %VAL==%VAL&377  
1143 LDBR \%VAL  
1144 INST @BR,\%PAGEV  
1145 >  
1146 DEFINE DATA(ARG1,ARG2),<  
1147 IF1 <0>  
1148 IF2 <  
1149 %%LOC  
1150 %VAL==0  
1151 IFNB <ARG1>,<%%VAL ARG1,DATA>  
1152 IFNB <ARG2>,<%%ERMP TOO MANY ARGUMENTS "ARG1" IN DATA,\.>  
1153 BYTE (2)<._-^D10>&3(18)%VAL&17777(16)%VAL  
1154 IFN %ERC,<%%ERRC==%%ERRC+1>  
1155 >  
1156 >  
1157 >  
1158 >  
1159 END
```

NO ERRORS DETECTED

PROGRAM BREAK IS 000000  
CPU TIME USED 00:02.087

24P CORE USED

AC0	000000	spd
AC1	000001	spd
AC2	000002	spd
AC3	000003	spd
AC4	000004	spd
AC5	000005	spd
AC6	000006	spd
AC7	000007	spd
I	000003	spd
MAR	000002	spd
MARX	000001	spd
%REL	000000	spd

AC0	30#
AC1	31#
AC2	32#
AC3	33#
AC4	34#
AC5	35#
AC6	36#
AC7	37#
I	40#
MAR	39#
MARX	38#
%%REL	9



LORM	396#
LORMR	404#
LXORB	698#
LXORBR	706#
LXORM	414#
LXORMR	422#
MOV	618#
MOVB	635#
MOVMEM	351#
MOVR	626#
NOP	145#
OSB	734#
OSBC	510#
OSBCR	518#
OSBR	742#
OSM	450#
OSMC	334#
OSMCR	342#
OSMR	458#
RETURN	193#
ROTL	582#
ROTLR	590#
SHL	564#
SHLR	572#
SHR	201#
TSB	716#
TSBR	724#
TSM	432#
TSMR	440#
%%AC	790#
%%ACN	970#
%%CHAR	944#
%%COMP	956#
%%CREF	41#
%%DEST	805#
%%ERM	840#
%%ERMP	849#
%%JMP	980#
%%JUMP	1135#
%%LOC	122#
%%LOCB	134#
%%LOCC	132#
%%MA	817#
%%MAT	949#
%%MOVA	750#
%%MOVI	209#
%%OUTP	829#
%%VAL	853#
..END	87#
.END	93#
.INIT	11#
.LOC	106#
.MEM	82#