


```

1 0001 0 MODULE RPG$DSPLY( %TITLE 'DSPLY an item'
2 0002 0 IDENT = '1-004' ! file RPGDISPLY.B32 EDIT:DG1004
3 0003 0 ) =
4 0004 1 BEGIN
5 0005 1
6 0006 1 *****
7 0007 1 *
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26 0026 1 *
27 0027 1 *****
28 0028 1
29 0029 1 ++
30 0030 1
31 0031 1
32 0032 1 FACILITY: RPGII SUPPORT
33 0033 1
34 0034 1 ABSTRACT:
35 0035 1
36 0036 1 This module contains the RTL routine that supports the RPG DSPLY
37 0037 1 opcode.
38 0038 1
39 0039 1 ENVIRONMENT: VAX/VMS user mode
40 0040 1
41 0041 1 AUTHOR: Debess Grabazs, CREATION DATE: 18-March-1983
42 0042 1
43 0043 1 MODIFIED BY:
44 0044 1
45 0045 1 1-001 - Original version. DG 18-Mar-1983.
46 0046 1 1-002 - use routine COB$$RET_A_AB_PREV to get address of COB$$AB_PREV.
47 0047 1 MDL 29-Aug-1983
48 0048 1 1-003 - Create temporary for overpunched numeric before calling
49 0049 1 COB$ACC_SCR. In case of invalid entry, original value will
50 0050 1 be saved. DG 30-Aug-1983.
51 0051 1 1-004 - Set RPG for calls to both COB$ACC_SCR and COB$DISP_SCR.
52 0052 1 DG 24-Oct-1983.
53 0053 1
54 0054 1 --
55 0055 1 <BLF/PAGE>

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57 0056 1 %SBTTL 'Declarations'
58 0057 1 | +
59 0058 1 | PROLOGUE FILE:
60 0059 1 | -
61 0060 1
62 0061 1 REQUIRE 'RTLIN:RPGPROLOG';           ! Switches, PSECTs, macros,
63 0126 1                                     ! Linkages and LIBRARYs
64 0127 1
65 0128 1 | +
66 0129 1 | LINKAGES
67 0130 1 |     NONE
68 0131 1 | -
69 0132 1
70 0133 1 | +
71 0134 1 | TABLE OF CONTENTS:
72 0135 1 | -
73 0136 1
74 0137 1 FORWARD ROUTINE
75 0138 1     RPG$DSPLY: NOVALUE;
76 0139 1
77 0140 1 | +
78 0141 1 | INCLUDE FILES
79 0142 1 |     NONE
80 0143 1 | -
81 0144 1
82 0145 1 | +
83 0146 1 | MACROS
84 0147 1 |     NONE
85 0148 1 | -
86 0149 1
87 0150 1 | +
88 0151 1 | EQUATED SYMBOLS
89 0152 1 |     NONE
90 0153 1 | -
91 0154 1
92 0155 1 | +
93 0156 1 | EXTERNAL REFERENCES
94 0157 1 | -
95 0158 1
96 0159 1 EXTERNAL ROUTINE
97 0160 1     COB$ACC_SCR,           ! ACCEPT with conversion
98 0161 1     COB$DISP_SCR,        ! DISPLAY with conversion
99 0162 1     COB$$RET_A_AB_PREV,  ! Return address of table giving
100 0163 1                                     ! call history for advancing purposes
101 0164 1     LIB$SIGNAL;          ! Signal warning and continue execution
102 0165 1
103 0166 1 EXTERNAL LITERAL
104 0167 1     RPG$_INVNUMENT;      ! Invalid numeric entry warning
105 0168 1
106 0169 1 EXTERNAL
107 0170 1     RPG$BTZ;             ! Table for translate blank to zero

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: 109 0171 1 %SBTTL 'RPG$DSPLY - DSPLY an item'
: 110 0172 1 GLOBAL ROUTINE RPG$DSPLY(
: 111 0173 1     FLAGS,
: 112 0174 1     DISPLAY FIELD: REF BLOCK[,BYTE],
: 113 0175 1     ACCEPT FIELD:  REF BLOCK[,BYTE]
: 114 0176 1     ): NOVALUE =
: 115 0177 1
: 116 0178 1 !++
: 117 0179 1
: 118 0180 1 : FUNCTIONAL DESCRIPTION:
: 119 0181 1
: 120 0182 1     This routine supports the RPG DSPLY opcode.
: 121 0183 1
: 122 0184 1 : CALLING SEQUENCE:
: 123 0185 1
: 124 0186 1     CALL RPG$DSPLY (flags.fl.v [,display_field.rx.dx]
: 125 0187 1     [,accept_fie(d.mx.dx)])
: 126 0188 1
: 127 0189 1 : FORMAL PARAMETERS:
: 128 0190 1
: 129 0191 1     flags                                bit 0 is set or if a comma should be
: 130 0192 1                                         used in place of decimal point; bit 1
: 131 0193 1                                         is set on if blanks in an overpunched
: 132 0194 1                                         numeric field should be treated as
: 133 0195 1                                         equivalent to zeroes.
: 134 0196 1
: 135 0197 1     display_field                          data item whose value is displayed.
: 136 0198 1
: 137 0199 1     accept_field                             data item whose value is displayed and
: 138 0200 1                                         a new value is accepted into.
: 139 0201 1
: 140 0202 1 : IMPLICIT INPUTS:
: 141 0203 1
: 142 0204 1     NONE
: 143 0205 1
: 144 0206 1 : IMPLICIT OUTPUTS:
: 145 0207 1
: 146 0208 1     NONE
: 147 0209 1
: 148 0210 1 : ROUTINE VALUE:
: 149 0211 1
: 150 0212 1     NONE
: 151 0213 1
: 152 0214 1 : SIDE EFFECTS:
: 153 0215 1
: 154 0216 1     NONE
: 155 0217 1
: 156 0218 1 :--

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158 0219 2 BEGIN
159 0220 2
160 0221 2 LITERAL
161 0222 2 TRUE = 1;
162 0223 2 DISP = 0;
163 0224 2
164 0225 2 DEC_IS_COMMA_BIT = 1;
165 0226 2 BTZ_BIT = 2;
166 0227 2 CONVERT_BIT = 32;
167 0228 2 COMMA_BIT = 64;
168 0229 2 PROTECT_BIT = 256;
169 0230 2 RPG_BIT = 2048;
170 0231 2
171 0232 2 LOCAL
172 0233 2 COB$$AB_PREV, ! Call history for advancing purposes
173 0234 2 DEV : -WORD, ! 2-byte array -
174 0235 2 ! device number + error
175 0236 2 ! handling decider
176 0237 2 FLAG, ! Attributes bit vector
177 0238 2 NRO FLAG : INITIAL (0), ! Indicates if dealing with overpunched numeric
178 0239 2 TEMP_NRO : BLOCK [12,BYTE] VOLATILE, ! Temporary string descriptor
179 0240 2 TEMP_STRING : VECTOR [15,BYTE]; ! Temporary string - this assumes an overpunched
180 0241 2 ! numeric string will only have, at most, 15 digits,
181 0242 2 ! a sign and a decimal point
182 0243 2 BUILTIN
183 0244 2 ACTUALCOUNT;
184 0245 2
185 0246 2 +
186 0247 2
187 0248 2 Get address of history of previous call.
188 0249 2 Note that using it this way will affect the whole longword
189 0250 2 at the address, and not just the first byte.
190 0251 2
191 0252 2 -
192 0253 2 COB$$AB_PREV = COB$$RET_A_AB_PREV();
193 0254 2
194 0255 2 +
195 0256 2
196 0257 2 Set up FLAG parameter.
197 0258 2
198 0259 2 -
199 0260 2 FLAG = CONVERT_BIT + RPG_BIT; ! Conversion and RPG
200 0261 2 IF (.FLAGS AND DEC_IS_COMMA_BIT) NEQ 0 ! Decimal is comma
201 0262 2 THEN FLAG = .FLAG + COMMA_BIT;
202 0263 2
203 0264 2 +
204 0265 2
205 0266 2 Deal with DISPLAY_FIELD.
206 0267 2
207 0268 2 -
208 0269 2 IF .DISPLAY_FIELD NEQ 0
209 0270 2 THEN
210 0271 2 BEGIN
211 0272 2
212 0273 2 IF (.DISPLAY_FIELD[DSC$$B_DTYPE] EQL DSC$$K_DTYPE_NRO) AND
213 0274 2 ((.FLAGS AND BTZ_BIT) NEQ 0)
214 0275 2 THEN

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      +
      - Convert blanks to zeroes if flag is set.
      -
      CHSTRANSULATE (RPG$BTZ,
        .DISPLAY_FIELD[DSC$W_LENGTH], .DISPLAY_FIELD[DSC$A_POINTER],
        0, .DISPCAY_FIELD[DSC$W_LENGTH], .DISPCAY_FIELD[DSC$A_POINTER]);

      .COB$$AB_PREV = DISP;          ! Set up history for proper advancing
      +
      - Display the field.
      -
      COB$DISP_SCR (1, .DISPLAY_FIELD, .FLAG);

      END;

      +
      - Deal with ACCEPT_FIELD.
      -
      IF (ACTUALCOUNT() EQL 3 AND .ACCEPT_FIELD NEQ 0)
      THEN
      BEGIN
        IF (.ACCEPT_FIELD[DSC$B_DTYPE] EQL DSC$K_DTYPE_NRO) AND
          ((.FLAGS AND BTZ_BIT) NEQ 0)
        THEN
          +
          - Convert blanks to zeroes if flag is set.
          -
          CHSTRANSULATE (RPG$BTZ,
            .ACCEPT_FIELD[DSC$W_LENGTH], .ACCEPT_FIELD[DSC$A_POINTER],
            0, .ACCEPT_FIELD[DSC$W_LENGTH], .ACCEPT_FIELD[DSC$A_POINTER]);

          .COB$$AB_PREV = DISP;          ! Set up history for proper advancing
          +
          - Display the field.
          -
          COB$DISP_SCR (1, .ACCEPT_FIELD, .FLAG);

          FLAG = .FLAG OR PROTECT_BIT;    ! Protect
          WHILE TRUE DO
            +
            - Keep ACCEPTing until successful.
            -
            BEGIN
              BIND
                ZERO = UPLIT ('0');

              .COB$$AB_PREV = DISP;          ! Set up history for proper advancing
              IF .ACCEPT_FIELD [DSC$B_DTYPE] EQL DSC$K_DTYPE_NRO
              THEN
                NRO_FLAG = TRUE;
              IF .NRO_FLAG
              THEN
                BEGIN

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272 0333 5
273 0334 5
274 0335 5
275 0336 5
276 0337 5
277 0338 5
278 0339 5
279 0340 5
280 0341 5
281 0342 5
282 0343 5
283 0344 6
284 0345 6
285 0346 6
286 0347 6
287 0348 6
288 0349 6
289 0350 6
290 0351 5
291 0352 5
292 0353 5
293 0354 5
294 0355 5
295 0356 5
296 0357 5
297 0358 5
298 0359 5
299 0360 5
300 0361 4
301 0362 4
302 0363 4
303 0364 4
304 0365 4
305 0366 6
306 0367 6
307 0368 5
308 0369 5
309 0370 4
310 0371 4
311 0372 5
312 0373 5
313 0374 5
314 0375 5
315 0376 5
316 0377 5
317 0378 5
318 0379 4
319 0380 4
320 0381 3
321 0382 3
322 0383 3
323 0384 3
324 0385 3
325 0386 3
326 0387 3
327 0388 3
328 0389 3

```

+
Overpunched numeric string must be saved because
COB$ACC_SCR zeroes it out and if there is invalid
input, the original string must be available in
case the user responds to the reprompt with a <CR>.
-
TEMP_NRO [DSC$W_LENGTH] = .ACCEPT_FIELD [DSC$W_LENGTH];
TEMP_NRO [DSC$B_DTYPE] = DSC$K_DTYPE_NRO;
TEMP_NRO [DSC$A_POINTER] = TEMP_STRING;
IF .ACCEPT_FIELD [DSC$B_CLASS] EQL DSC$K_CLASS_SD
THEN
    BEGIN
        TEMP_NRO [DSC$B_CLASS] = DSC$K_CLASS_SD;
        TEMP_NRO [DSC$B_SCALE] = .ACCEPT_FIELD [DSC$B_SCALE];
        TEMP_NRO [DSC$B_DIGITS] = .ACCEPT_FIELD [DSC$B_DIGITS];
    END
ELSE
    TEMP_NRO [DSC$B_CLASS] = DSC$K_CLASS_S;

+ Initialize the temporary string.
-
CH$MOVE (.ACCEPT_FIELD [DSC$W_LENGTH],
        .ACCEPT_FIELD [DSC$A_POINTER],
        TEMP_STRING);

END;

+ Accept into the field.
-
IF ( COB$ACC_SCR (0, (IF .NRO_FLAG
                    THEN TEMP_NRO
                    ELSE .ACCEPT_FIELD),
                .FLAG, 0, 0, 0, 0) )
THEN EXITLOOP
ELSE
    BEGIN
        + Error - print warning and re-prompt.
        -
        LIB$SIGNAL (RPG$ INVNUMENT);
        .COB$$AB_PREV = DISP;          ! Set up history for proper advancing
    END;

END;

IF .NRO_FLAG
THEN
    + Move accepted string from temporary to actual accept field.
    -
    CH$MOVE (.ACCEPT_FIELD [DSC$W_LENGTH], TEMP_STRING,
            .ACCEPT_FIELD [DSC$A_POINTER]);

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: 329
: 330
: 331
: 332
0390 3
0391 2      END;
0392 2
0393 1      END;

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          .TITLE  RPG$DSPLY DSPLY an item
          .IDENT  \1-004\

          .PSECT  _RPG$CODE,NOWRT, SHR, PIC,2

          00 00 00 30 00000 P.AAA: .ASCII  \0\<0><0><0>
                                ZERO=
                                P.AAA
          .EXTRN  COB$ACC_SCR, COB$DISP_SCR
          .EXTRN  COB$$RET_A_AB_PREV
          .EXTRN  LIB$SIGNAL, RPG$_INVNUMENT
          .EXTRN  RPG$BTZ

                                OFFC 00000
          .ENTRY  RPG$DSPLY, Save R2,R3,R4,R5,R6,R7,R8,R9,-
                                R10,R11
          5B 00000000G 00 9E 00002  MOVAB  COB$DISP_SCR, R11
          5A 00000000G 00 9E 00009  MOVAB  RPG$BTZ, R10
          5E          1C  C2 00010  SUBL2  #28, SP
                                58  D4 00013  CLRL  NRO_FLAG
          00000000G 00 00 00015  CALLS  #0, COB$$RET_A_AB_PREV
          59          50  30 0001C  MOVL  R0, COB$$AB_PREV
          57          8F  3C 0001F  MOVZWL #2080, FLAG
          04          04  AC  E9 00024  BLBC  FLAGS, 1$
          57          40  A7  9E 00028  MOVAB  64(R7), FLAG
          56          08  AC  D0 0002C  1$:  MOVL  DISPLAY_FIELD, R6
                                1D  13 00030  BEQL  3$
          13          02  A6  91 00032  CMPB  2(R6), #19
                                0D  12 00036  BNEQ  2$
          6A          09  00  04 6C  21  E1 00038  BBC   #33, FLAGS, 2$
          00          04  04  B6  66  2E 0003C  MOVTC (R6), @4(R6), #0, RPG$BTZ, (R6), @4(R6)
          04          04  B6  66          00042
          04          69  D4 00045  2$:  CLRL  (COB$$AB_PREV)
          04          56  7D 00047  MOVQ  R6, -(SP)
          04          01  DD 0004A  PUSHL #1
          04          03  FB 0004C  CALLS #3, COB$DISP_SCR
          6A          09  00  04 68  6C  91 0004F  3$:  CMPB  (AP), #3
          00          04  03  03  01  13 00052  BEQL  4$
          04          0C  AC  D5 00055  4$:  TSTL  ACCEPT_FIELD
          04          01  12 00058  BNEQ  5$
          04          04  0005A  RET
          04          56  0C  AC  D0 0005B  5$:  MOVL  ACCEPT_FIELD, R6
          04          13  02  A6  91 0005F  CMPB  2(R6), #19
          04          0D  12 00063  BNEQ  6$
          6A          09  00  04 6C  21  E1 00065  BBC   #33, FLAGS, 6$
          00          04  04  B6  66  2E 00069  MOVTC (R6), @4(R6), #0, RPG$BTZ, (R6), @4(R6)
          04          04  B6  66          0006F
          04          69  D4 00072  6$:  CLRL  (COB$$AB_PREV)
          04          56  7D 00074  MOVQ  R6, -(SP)
          04          01  DD 00077  PUSHL #1
          04          03  FB 00079  CALLS #3, COB$DISP_SCR

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		57	0100	8F	A8	0007C		BISW2	#256, FLAG	0316
				69	D4	00081	7\$:	CLRL	(COB\$\$AB_PREV)	0326
		13	02	A6	91	00083		CMPB	2(R6), #T9	0327
				03	12	00087		BNEQ	8\$	
		58		01	D0	00089		MOVL	#1, NRO FLAG	0329
		2B		58	E9	0008C	8\$:	BLBC	NRO FLAG, 11\$	0330
	10	AE		66	B0	0008F		MOVW	(R6), TEMP_NRO	0339
	12	AE		13	90	00093		MOVW	#19, TEMP_NRO+2	0340
	14	AE		6E	9E	00097		MOVAB	TEMP_STRING, TEMP_NRO+4	0341
		09	03	A6	91	0009B		CMPB	3(R6), #9	0342
				10	12	0009F		BNEQ	9\$	
	13	AE		09	90	000A1		MOVW	#9, TEMP_NRO+3	0346
	18	AE	08	A6	90	000A5		MOVW	8(R6), TEMP_NRO+8	0347
	19	AE	09	A6	90	000AA		MOVW	9(R6), TEMP_NRO+9	0348
				04	11	000AF		BRB	10\$	0342
	13	AE		01	90	000B1	9\$:	MOVW	#1, TEMP_NRO+3	0352
6E	04	B6		66	28	000B5	10\$:	MOVW	(R6), @4(R6), TEMP_STRING	0357
				7E	7C	000BA	11\$:	CLRL	-(SP)	0366
				7E	7C	000BC		CLRL	-(SP)	
				57	DD	000BE		PUSHL	FLAG	0369
	08			58	E9	000C0		BLBC	NRO FLAG, 12\$	
	50		24	AE	9E	000C3		MOVAB	TEMP_NRO, R0	0366
				50	DD	000C7		PUSHL	R0	
				02	11	000C9		BRB	13\$	
				56	DD	000CB	12\$:	PUSHL	R6	0368
				7E	D4	000CD	13\$:	CLRL	-(SP)	0366
	00000000G	00		07	FB	000CF		CALLS	#7, COB\$ACC_SCR	
		11		50	E8	000D6		BLBS	R0, 14\$	
			00000000G	8F	DD	000D9		PUSHL	#RPG\$ INVNUMENT	0376
	00000000G	00		01	FB	000DF		CALLS	#1, LIB\$SIGNAL	
				69	D4	000E6		CLRL	(COB\$\$AB_PREV)	0377
				97	11	000E8		BRB	7\$	0317
		05		58	E9	000EA	14\$:	BLBC	NRO FLAG, 15\$	0383
04	B6	6E		66	28	000ED		MOVW	(R6), TEMP_STRING, @4(R6)	0389
				04	000F2		15\$:	RET		0393

: Routine Size: 243 bytes, Routine Base: _RPG\$CODE + 0004

: 333 0394 1
: 334 0395 0 END ELUDOM

PSECT SUMMARY

Name	Bytes	Attributes
_RPG\$CODE	247	NOVEC, NOWRT, RD, EXE, SHR, LCL, REL, CON, PIC, ALIGN(2)

Library Statistics

RPG\$DSPLY
1-004

DSPLY an item
RPG\$DSPLY - DSPLY an item

M 12
16-Sep-1984 02:13:33
14-Sep-1984 13:04:17

VAX-11 Bliss-32 V4.0-742
[RPGRTL.SRC]RPGDSPLY.B32;1

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File	----- Total	Symbols Loaded	----- Percent	Pages Mapped	Processing Time
_\$255\$DUA28:[SYSLIB]STARLET.L32;1	9776	9	0	581	00:01.0
_\$255\$DUA28:[RPGRTL.OBJ]RPGLIB.L32;1	54	0	0	9	00:00.1

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS\$:RPGDSPLY/OBJ=OBJ\$:RPGDSPLY MSRC\$:RPGDSPLY/UPDATE=(ENH\$:RPGDSPLY)

: Size: 243 code + 4 data bytes
: Run Time: 00:07.3
: Elapsed Time: 00:25.5
: Lines/CPU Min: 3259
: Lexemes/CPU-Min: 14079
: Memory Used: 103 pages
: Compilation Complete

