


```
1 0001 0 MODULE RPG$DIVIDE(IDENT='1-003')=
2 0002 1 BEGIN
3 0003 1
4 0004 1
5 0005 1 *****
6 0006 1 *
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24 0024 1 *
25 0025 1 *
26 0026 1 *****
27 0027 1
28 0028 1
29 0029 1 ++
30 0030 1
31 0031 1 FACILITY: RPGII SUPPORT
32 0032 1
33 0033 1 ABSTRACT:
34 0034 1
35 0035 1 This module supports RPG divides over 31 packed digits
36 0036 1
37 0037 1 ENVIRONMENT: VAX/VMS user mode
38 0038 1
39 0039 1 AUTHOR: Shelly T. Solomon, CREATION DATE: 15-Jul-1983
40 0040 1
41 0041 1 MODIFIED BY:
42 0042 1
43 0043 1 1-001 Original. STS 15-Jul-1983
44 0044 1 1-002 Pass scale-data to PLI$DIV_PK_SHRT. STS 02-Nov-1983
45 0045 1 1-003 Change reference to PLI$ routine to OTSS routine. DG 05-Mar-1984
46 0046 1 --
47 0047 1
48 0048 1 REQUIRE 'RTLIN:RPGPROLOG'; ! switches, psects, macros,
49 0113 1 ! linkages and LIBRARYs
50 0114 1
51 0115 1 !+
52 0116 1 ! TABLE OF CONTENTS
53 0117 1 !-
54 0118 1
55 0119 1 FORWARD ROUTINE
56 0120 1 RPG$DIV_LONG : NOVALUE;
57 0121 1
```

RPG\$DIVIDE
1-003

L 11
16-Sep-1984 02:12:53
14-Sep-1984 13:04:17

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

Page 2
(1)

:	58	0122	1	!+	
:	59	0123	1	!-	EXTERNAL REFERENCES
:	60	0124	1	!-	
:	61	0125	1		
:	62	0126	1		EXTERNAL ROUTINE
:	63	0127	1		OTSS\$DIV_PKSHORT;
:	64	0128	1		
:	65	0129	1		BUILTIN
:	66	0130	1		ASHP;
:	67	0131	1		

```

69 0132 1 GLOBAL ROUTINE RPG$DIV_LONG(
70 0133 1     FACTOR_1: REF BLOCK[,BYTE],      ! dividend (packed dec by descriptor)
71 0134 1     FACTOR_2: REF BLOCK[,BYTE],  ! divisor (packed dec by descriptor)
72 0135 1     RESULT: REF BLOCK[,BYTE]    ! result (packed dec by descriptor)
73 0136 1     ): NOVALUE=
74 0137 1
75 0138 1  !++
76 0139 1
77 0140 1  FUNCTIONAL DESCRIPTION:
78 0141 1
79 0142 1     This routine supports RPG divides when precision and scale
80 0143 1     requirements call for precision > 31 decimal digits.
81 0144 1     It accepts as input packed decimal strings, and outputs a
82 0145 1     packed result.
83 0146 1
84 0147 1  CALLING SEQUENCE:
85 0148 1
86 0149 1     CALL RPG$DIV_LONG (factor_1.rp.ds, .factor_2.rp.ds, result.wp.ds)
87 0150 1
88 0151 1  FORMAL PARAMETERS:
89 0152 1
90 0153 1     FACTOR_1      address of descriptor of dividend for divide
91 0154 1     The allowable data type is packed.
92 0155 1
93 0156 1     FACTOR_2      address of descriptor of divisor for divide
94 0157 1     The allowable data type is packed.
95 0158 1
96 0159 1     RESULT       address of descriptor of result of the divide
97 0160 1     operation. The allowable data type is packed.
98 0161 1
99 0162 1  IMPLICIT INPUTS:
100 0163 1
101 0164 1     NONE
102 0165 1
103 0166 1  IMPLICIT OUTPUTS:
104 0167 1
105 0168 1     NONE
106 0169 1
107 0170 1  ROUTINE VALUE:
108 0171 1
109 0172 1     NONE
110 0173 1
111 0174 1  SIDE EFFECTS:
112 0175 1
113 0176 1     NONE
114 0177 1
115 0178 1  !--
116 0179 2  BEGIN
117 0180 2
118 0181 2  LOCAL
119 0182 2     A,          ! additional precision needed
120 0183 2     C,          ! scale factor for dividend
121 0184 2     D,          ! scale-data for divide
122 0185 2     DIVIDEND : VECTOR[16,BYTE]; ! scaled dividend
123 0186 2  !+
124 0187 2  Note: the variables names, A,C, and D were chosen to correspond to the
125 0188 2  ! PLI(OTS) documentation of the run-time routine. (See the Language Support

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: 126      0189 2 | Reference Manual.)
: 127      0190 2
: 128      0191 2
: 129      0192 2 calculate additional digits of precision required
: 130      0193 2 The sign of the scale which we use is the negative of the scale which the
: 131      0194 2 run-time routine is referring to, because of the way we store negative numbers.
: 132      0195 2
: 133      0196 2 A = .FACTOR_1[DSC$W_LENGTH] - .FACTOR_2[DSC$B_SCALE] - .RESULT[DSC$B_SCALE]
: 134      0197 2 + .FACTOR_1[DSC$B_SCALE] -31;
: 135      0198 2
: 136      0199 2 +
: 137      0200 2 Get scale factor needed to make the dividend a 31 digit number.
: 138      0201 2
: 139      0202 2 C = 31 - .FACTOR_1[DSC$W_LENGTH];
: 140      0203 2
: 141      0204 2 +
: 142      0205 2 Get the data scale
: 143      0206 2
: 144      0207 2 D = 31 + .FACTOR_2[DSC$B_SCALE];
: 145      0208 2
: 146      0209 2 +
: 147      0210 2 Move from the packed dividend to temporary dividend scaling by 10**c
: 148      0211 2
: 149      0212 2 ASHP(C, FACTOR_1[DSC$W_LENGTH], .FACTOR_1[DSC$A_POINTER], %REF(0),
: 150      0213 2 %REF(31), DIVIDEND);
: 151      0214 2
: 152      0215 2 OTSS$DIV_PKSHORT(DIVIDEND, .FACTOR_2[DSC$A_POINTER], .FACTOR_2[DSC$W_LENGTH],
: 153      0216 2 .RESULT[DSC$A_POINTER], .RESULT[DSC$W_LENGTH], .A, .D);
: 154      0217 2
: 155      0218 2 RETURN;
: 156      0219 2 END;

```

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.TITLE  RPG$DIVIDE
.IDENT  \1-003\
.EXTRN  OTSS$DIV_PKSHORT
.PSECT  _RPG$CODE,NOWRT, SHR, PIC,2
.ENTRY  RPG$DIV_LONG, Save R2,R3,R4,R5,R6,R7 : 0132
SUBL2  #16, SP
MOVL   FACTOR_1, R2 : 0196
MOVL   FACTOR_2, R5
MOVZWL (R2), R0
CVTBL  8(R5), R1
SUBL2  R1, R0
MOVL   RESULT, R4
CVTBL  8(R4), R3
SUBL2  R3, R0
CVTBL  8(R2), R1 : 0197
MOVAB  -31(R1)[R0], A : 0202
MOVZWL (R2), C : 0207
SUBL3  C, #31, C : 0212
CVTBL  8(R5), D
ADDL2  #31, D
ASHP   C, (R2), @4(R2), #0, #31, DIVIDEND

```

				00FC	0000
5E		10	C2	00002	
52	04	AC	D0	00005	
55	08	AC	D0	00009	
50		62	3C	0000D	
51	08	A5	98	00010	
50		51	C2	00014	
54	0C	AC	D0	00017	
53	08	A4	98	0001B	
50		53	C2	0001F	
51	08	A2	98	00022	
57	E1	A140	9E	00026	
50		62	3C	0002B	
50		50	C3	0002E	
56	08	A5	98	00032	
56		1F	C0	00036	
00	04	B2	62	50	F8
				00039	

6E		1F	0003F							:	
		56	DD 00041	PUSHL	D					:	0216
		57	DD 00043	PUSHL	A					:	
7E		64	3C 00045	MOVZWL	(R4), -(SP)					:	
	04	A4	DD 00048	PUSHL	4(R4)					:	
7E		65	3C 0004B	MOVZWL	(R5), -(SP)					:	0215
	04	A5	DD 0004E	PUSHL	4(R5)					:	
	18	AE	9F 00051	PUSHAB	DIVIDEND					:	
00000000G	00	07	FB 00054	CALLS	#7, OTSS\$DIV_PKSHORT					:	
		04	0005B	RET						:	0219

: Routine Size: 92 bytes, Routine Base: _RPG\$CODE + 0000

: 157 0220 1

: 159 0221 1 END
: 160 0222 0 ELUDOM

PSECT SUMMARY

Name	Bytes	Attributes
_RPG\$CODE	92	NOVEC,NOWRT, RD , EXE, SHR, LCL, REL, CON, PIC,ALIGN(2)

Library Statistics

File	Total	Symbols Loaded	Percent	Pages Mapped	Processing Time
_\$255\$DUA28:[SYSLIB]STARLET.L32;1	9776	3	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\$:RPGDIVIDE/OBJ=OBJ\$:RPGDIVIDE MSRC\$:RPGDIVIDE/UPDATE=(ENH\$:RPGDIVIDE)

: Size: 92 code + 0 data bytes
: Run Time: 00:04.2
: Elapsed Time: 00:17.5
: Lines/CPU Min: 3148
: Lexemes/CPU-Min: 11063
: Memory Used: 50 pages
: Compilation Complete

