



```

LL          IIIIII  BBBB BBBB  FFFFFFFF  FFFFFFFF  SSSSSSSS
LL          IIIIII  BBBB BBBB  FFFFFFFF  FFFFFFFF  SSSSSSSS
LL          II      BB      BB  FF      FF  FF      FF  SS
LL          II      BB      BB  FF      FF  FF      FF  SS
LL          II      BB      BB  FF      FF  FF      FF  SS
LL          II      BB      BB  FF      FF  FF      FF  SS
LL          II      BBBB BBBB  FFFFFFFF  FFFFFFFF  SSSSSS
LL          II      BBBB BBBB  FFFFFFFF  FFFFFFFF  SSSSSS
LL          II      BB      BB  FF      FF  FF      FF  SS
LL          II      BB      BB  FF      FF  FF      FF  SS
LL          II      BB      BB  FF      FF  FF      FF  SS
LL          II      BB      BB  FF      FF  FF      FF  SS
LLLLLLLLLL IIIIII  BBBB BBBB  FF      FF  FF      FF  SSSSSSSS
LLLLLLLLLL IIIIII  BBBB BBBB  FF      FF  FF      FF  SSSSSSSS

```

```

LL          IIIIII  SSSSSSSS
LL          IIIIII  SSSSSSSS
LL          II      SS
LL          II      SS
LL          II      SS
LL          II      SS
LL          II      SSSSSS
LL          II      SSSSSS
LL          II      SS
LL          II      SS
LL          II      SS
LL          II      SS
LLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLL IIIIII  SSSSSSSS

```

.....

(2) 53  
(3) 85

DECLARATIONS  
LIB\$FFS - find first set bit

```

0000 1 .TITLE LIBSFFS - find first set bit
0000 2 .IDENT /1-002/ ; File: LIBSFFS.MAR
0000 3
0000 4
0000 5 *****
0000 6 *
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0000 23 * SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL. *
0000 24 *
0000 25 *
0000 26 *****
0000 27
0000 28
0000 29 ++
0000 30 FACILITY: General Utility Library
0000 31
0000 32 ABSTRACT:
0000 33
0000 34 A bit string is scanned for the first bit set. If one is found before
0000 35 the string is exhausted then a success status is returned. Otherwise a
0000 36 failure status is returned.
0000 37
0000 38 ENVIRONMENT: User Mode, AST Reentrant
0000 39
0000 40 --
0000 41 AUTHOR: Donald G. Petersen, CREATION DATE: 03-Jan-78
0000 42
0000 43 MODIFIED BY:
0000 44
0000 45 DGP, 03-Jan-78 : VERSION 00
0000 46 01 - Original
0000 47 00-02 - DGP 06-Jan-78 - change LIB$NOTFOU to literal
0000 48 change BEQL to BNEQ following FFS
0000 49 00-03 - Return SS$ NORMAL instead of SS$ NORMAL. TNH 15-July-78
0000 50 1-001 - Update version number and copyright notice. JBS 16-NOV-78
0000 51 1-002 - Add "_" to PSECT directive. JBS 21-DEC-78

```

```

0000 53      .SBTTL  DECLARATIONS
0000 54      :
0000 55      : INCLUDE FILES:
0000 56      :
0000 57      :
0000 58      :
0000 59      : EXTERNAL DECLARATIONS:
0000 60      :
0000 61      .DSABL  GBL                ; Disable automatic generation of
0000 62      :                                     ; .EXTRN
0000 63      .EXTRN  SSS$ NORMAL        ; Normal successful completion
0000 64      .EXTRN  LIB$_NOTFOU       ; SEVERE error condition
0000 65      :                                     ; Value not found
0000 66      :
0000 67      :
0000 68      : MACROS:
0000 69      :
0000 70      :
0000 71      :
0000 72      : EQUATED SYMBOLS:
0000 73      :
0000 74      :
0000 75      :
0000 76      : OWN STORAGE:
0000 77      :
0000 78      :
0000 79      :
0000 80      : PSECT DECLARATIONS:
0000 81      :
00000000 82      .PSECT _LIB$CODE PIC, SHR, LONG, EXE, NOWRT
0000 83

```

```

0000 85      .SBTTL LIB$FFS - find first set bit
0000 86      :++
0000 87      : FUNCTIONAL DESCRIPTION:
0000 88      :
0000 89      : The field specified by the start position, size, and base is searched
0000 90      : for the first set bit. If one is found, a success status is returned as
0000 91      : well as the bit position (relative to the base) in the find position.
0000 92      : If a set bit is not found, a failure status is returned. If the size specif
0000 93      : is zero then a failure status is returned.
0000 94      :
0000 95      : CALLING SEQUENCE:
0000 96      :
0000 97      : status.wlc.v = LIB$FFS (startpos.rl.r, size.rbu.r, base.rl.r, findpos.wl.r)
0000 98      :
00000004 0000 99      : STARTPOS = 4 ; Adr of start position
00000008 0000 100     : SIZE = 8 ; Adr of size
0000000C 0000 101     : BASE = 12 ; Adr of base
00000010 0000 102     : FINDPOS = 16 ; Adr of field for set bit position
0000 103     :
0000 104     : INPUT PARAMETERS:
0000 105     :
0000 106     : NONE
0000 107     :
0000 108     : IMPLICIT INPUTS:
0000 109     :
0000 110     : NONE
0000 111     :
0000 112     : OUTPUT PARAMETERS:
0000 113     :
0000 114     : NONE
0000 115     :
0000 116     : IMPLICIT OUTPUTS:
0000 117     :
0000 118     : NONE
0000 119     :
0000 120     : FUNCTION VALUE:
0000 121     :
0000 122     : S$$ NORMAL - if a set bit is found
0000 123     : LIB$_NOTFOU - if a set bit is not found
0000 124     :
0000 125     : SIDE EFFECTS:
0000 126     :
0000 127     : S$$_ROPRAND - reserved operand fault occurs if:
0000 128     : 1.) size greater than 32 is specified
0000 129     : 2.) start position is greater than 31 and field is in registers
0000 130     :
0000 131     :--
0000 132     :
0000 133     : .ENTRY LIB$FFS , ^M< > ; Entry point
10 BC 0C BC 08 BC 04 BC EA 0002 134
0002 135     FFS @STARTPOS(AP), @SIZE(AP), - ; find first set bit
000B 136     @BASE(AP), @FINDPOS(AP)
50 00000000'8F 08 12 000B 137     BNEQ 10$ ; branch if bit found
50 00000000'8F D0 000D 138     MOVL #LIB$_NOTFOU, R0 ; return failure status
50 00000000'8F D0 0014 139     RET
04 0015 140 10$: MOVL #S$$_NORMAL, R0 ; return success status
04 001C 141     RET

```

LIBSFFS  
1-002

- find first set bit  
LIBSFFS - find first set bit

001D 142 .END

I 11

16-SEP-1984 00:08:51 VAX/VMS Macro V04-00  
6-SEP-1984 11:06:54 [LIBRTL.SRC]LIBSFFS.MAR;1

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(3)

LI  
VO

LIB\$FFS  
Symbol table

- find first set bit

J 11

16-SEP-1984 00:08:51  
6-SEP-1984 11:06:54

VAX/VMS Macro V04-00  
[LIBRTL.SRC]LIBFFS.MAR;1

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(3)

BASE	=	0000000C		
FINDPOS	=	00000010		
LIB\$FFS		00000000	RG	01
LIB\$NOTFOU		*****	X	00
SIZE	=	00000008		
SS\$ NORMAL		*****	X	00
STARTPOS	=	00000004		

-----  
! Psect synopsis !  
-----

PSECT name	Allocation	PSECT No.	Attributes										
ABS	00000000 ( 0.)	00 ( 0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE
LIB\$CODE	0000001D ( 29.)	01 ( 1.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG

-----  
! Performance indicators !  
-----

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.04	00:00:01.17
Command processing	111	00:00:00.28	00:00:03.23
Pass 1	66	00:00:00.21	00:00:02.06
Symbol table sort	0	00:00:00.01	00:00:00.01
Pass 2	40	00:00:00.17	00:00:01.58
Symbol table output	2	00:00:00.01	00:00:00.01
Psect synopsis output	2	00:00:00.01	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	252	00:00:00.73	00:00:08.07

The working set limit was 900 pages.  
 1407 bytes (3 pages) of virtual memory were used to buffer the intermediate code.  
 There were 10 pages of symbol table space allocated to hold 7 non-local and 1 local symbols.  
 142 source lines were read in Pass 1, producing 11 object records in Pass 2.  
 0 pages of virtual memory were used to define 0 macros.

-----  
! Macro library statistics !  
-----

Macro library name	Macros defined
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	0

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:LIBFFS/OBJ=OBJ\$:LIBFFS MSRC\$:LIBFFS/UPDATE=(ENH\$:LIBFFS)

0206 AH-BT13A-SE  
VAX/VMS V4.0

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