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LL      IIIIII  BBBB8888  FFFFFFFFFF  FFFFFFFFFF  SSSSSSSS
LL      IIIIII  88888888  FFFFFFFFFF  FFFFFFFFFF  SSSSSSSS
LL      II      88      88  FF      FF      SS
LL      II      88      88  FF      FF      SS
LL      II      88      88  FF      FF      SS
LL      II      88      88  FF      FF      SS
LL      II      BBBB8888  FFFFFFFF  FFFFFFFF  SSSSSS
LL      II      88888888  FFFFFFFF  FFFFFFFF  SSSSSS
LL      II      88      88  FF      FF      SS
LL      II      88      88  FF      FF      SS
LL      II      88      88  FF      FF      SS
LL      II      88      88  FF      FF      SS
LLLLLLLLLLLL  IIIIII  88888888  FF      FF      SSSSSSSS
LLLLLLLLLLLL  IIIIII  88888888  FF      FF      SSSSSSSS

```

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LL      IIIIII  SSSSSSSS
LL      IIIIII  SSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
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LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLLLL  IIIIII  SSSSSSSS
LLLLLLLLLLLL  IIIIII  SSSSSSSS

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LIB\$FFS
Table of contents

- find first set bit

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DECLARATIONS
LIB\$FFS - find first set bit

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```

0000 1      .TITLE LIBSFFS - find first set bit
0000 2      .IDENT /1-002/ ; File: LIBSFFS.MAR
0000 3
0000 4
0000 5 :*****
0000 6 :*
0000 7 :*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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0000 21 :*
0000 22 :*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
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     : SSS_NORMAL - if a set bit is found
0000 123     : LIB$_NOTFOU - if a set bit is not found
0000 124     :
0000 125     : SIDE EFFECTS:
0000 126     :
0000 127     : SSS_ROPRAND - reserved operand fault occurs if:
0000 128     : 1.) size greater than 32 is specified
0000 129     : 2.) start position is greater than 31 and field is in registers
0000 130     :
0000 131     :--
0000 132     :
0000 133     : .ENTRY LIB$FFS , ^M< > ; Entry point
0002 134     :
10 BC 0C BC 08 BC 04 BC EA 0002 135     FFS @STARTPOS(AP), @SIZE(AP), - ; find first set bit
000B 136     @BASE(AP), @FINDPOS(AP)
000B 137     BNEQ 10$ ; branch if bit found
50 00000000'8F 08 12 000B 138     MOVL #LIB$_NOTFOU, R0 ; return failure status
04 0014 139     RET
50 00000000'8F 04 0015 140 10$: MOVL #SS$_NORMAL, R0 ; return success status
04 001C 141     RET

```

LIB\$FFS
1-002

- find first set bit
LIB\$FFS - find first set bit
001D 142 .END

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6-SEP-1984 11:06:54 [LIBRTL.SRC]LIB\$FFS.MAR;1

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LIB\$FFS
Symbol table

- find first set bit

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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=LISS:LIBFFS/OBJ=OBJ\$:LIBFFS MSRCS:LIBFFS/UPDATE=(ENH\$:LIBFFS)

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

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The image displays a grid of 100 small technical diagrams or code snippets, arranged in 10 rows and 10 columns. Each diagram is a small-scale representation of a system component or a specific code block. The diagrams are labeled with various identifiers, including:

- LIBEMODH LIS
- LIBEMODU LIS
- LIBEMULAT LIS
- LIBBFFS LIS
- LIBFINCUT LIS
- LIBFAO LIS
- LIBBEMODG LIS
- LIBEXTV LIS
- LIBBEMODF LIS
- LIBEMUL LIS
- LIBFILSCA LIS
- LIBEXTZU LIS
- LIBBASC LIS
- LIBFAOL LIS

Each diagram typically shows a series of vertical bars of varying heights, representing data or a signal waveform. Some diagrams also include text labels and small graphical elements, such as arrows or boxes, indicating specific features or components. The overall appearance is that of a technical manual or a reference guide for digital equipment.