

```

DDDDDDDDDDDD  TTTTTTTTTTTTTT  SSSSSSSSSSSS  DDDDDDDDDDDDD  TTTTTTTTTTTTTT  RRRRRRRRRRRR
DDDDDDDDDDDD  TTTTTTTTTTTTTT  SSSSSSSSSSSS  DDDDDDDDDDDDD  TTTTTTTTTTTTTT  RRRRRRRRRRRR
DDDDDDDDDDDD  TTTTTTTTTTTTTT  SSSSSSSSSSSS  DDDDDDDDDDDDD  TTTTTTTTTTTTTT  RRRRRRRRRRRR
DDD           DDD           TTT           SSS           DDD           DDD           TTT           RRR           RRR
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DDD           DDD           TTT           SSS           DDD           DDD           TTT           RRR           RRR
DDD           DDD           TTT           SSS           DDD           DDD           TTT           RRR           RRR
DDD           DDD           TTT           SSS           DDD           DDD           TTT           RRR           RRR
DDD           DDD           TTT           SSS           DDD           DDD           TTT           RRR           RRR
DDD           DDD           TTT           SSS           DDD           DDD           TTT           RRR           RRR
DDDDDDDDDDDD  TTT           SSSSSSSSSSSS  DDDDDDDDDDDDD  TTT           RRRRRRRRRRRR
DDDDDDDDDDDD  TTT           SSSSSSSSSSSS  DDDDDDDDDDDDD  TTT           RRRRRRRRRRRR
DDDDDDDDDDDD  TTT           SSSSSSSSSSSS  DDDDDDDDDDDDD  TTT           RRRRRRRRRRRR

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DDDDDDDD      TTTTTTTTTT  MM      MM      AAAAAA      CCCCCCCC      RRRRRRRR      000000      SSSSSSSS
DDDDDDDD      TTTTTTTTTT  MM      MM      AAAAAA      CCCCCCCC      RRRRRRRR      000000      SSSSSSSS
DD      DD      TT      MMMM      MMMM      AA      AA      CC      RR      RR      00      00      SS
DD      DD      TT      MMMM      MMMM      AA      AA      CC      RR      RR      00      00      SS
DD      DD      TT      MM      MM      AA      AA      CC      RR      RR      00      00      SS
DD      DD      TT      MM      MM      AA      AA      CC      RR      RR      00      00      SS
DD      DD      TT      MM      MM      AA      AA      CC      RRRRRRRR      00      00      SSSSSS
DD      DD      TT      MM      MM      AA      AA      CC      RRRRRRRR      00      00      SSSSSS
DD      DD      TT      MM      MM      AAAAAAAAAA      CC      RR      RR      00      00      SS
DD      DD      TT      MM      MM      AAAAAAAAAA      CC      RR      RR      00      00      SS
DD      DD      TT      MM      MM      AA      AA      CC      RR      RR      00      00      SS
DD      DD      TT      MM      MM      AA      AA      CC      RR      RR      00      00      SS
DDDDDDDD      TT      MM      MM      AA      AA      CCCCCCCC      RR      RR      000000      SSSSSSSS
DDDDDDDD      TT      MM      MM      AA      AA      CCCCCCCC      RR      RR      000000      SSSSSSSS

```

```

MM      MM      AAAAAA      RRRRRRRR
MM      MM      AAAAAA      RRRRRRRR
MMMM      MMMM      AA      AA      RR      RR
MMMM      MMMM      AA      AA      RR      RR
MM      MM      AA      AA      RR      RR
MM      MM      AA      AA      RR      RR
MM      MM      AA      AA      RRRRRRRR
MM      MM      AA      AA      RRRRRRRR
MM      MM      AAAAAAAAAA      RR      RR
MM      MM      AAAAAAAAAA      RR      RR
MM      MM      AA      AA      RR      RR
MM      MM      AA      AA      RR      RR
MM      MM      AA      AA      RR      RR
MM      MM      AA      AA      RR      RR

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.TITLE TSTSDTMACROS - MACRO DEFINITIONS FOR DTS/DTR  
.IDENT 'V04-000'

```

*****
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```

**
: FACILITY: DTS/DTR DECNET TEST PACKAGE
:
: ABSTRACT: MACRO DEFINITIONS USED BY DTS/DTR MODULES.
:
: ENVIRONMENT: DTS/DTR RUN IN USER MODE AND REQUIRE NETWORK PRIVILEGE.
:
: AUTHOR: JAMES A. KRYCKA,      CREATION DATE: 11-AUG-77
:
: MODIFICATIONS:
:
:--

```

## .SBTTL CODE GENERATION MACROS

```

:++
: QBLOCK GENERATES A QUADWORD DESCRIPTOR BLOCK FOLLOWED BY THE
: CHARACTER STRING AND/OR ALLOCATED SPACE.
:--

```

```

      .MACRO QBLOCK TEXT,SPACE=0,BUFADR,?LABEL1,?LABEL2
      .LONG LABEL2-LABEL1
      .LONG LABEL1
      .IF NB BUFADR
BUFADR==.
      .ENDC
LABEL1:
      .IRP STR,<TEXT>
      .ASCII \STR\
      .ENDR
      .IF NE SPACE
      .BLKB SPACE
      .ENDC
LABEL2:
      .ENDM QBLOCK

```

```

:++
: SSB SETS A SINGLE BIT IN A FIELD.
:--

```

```

      .MACRO SSB POS,BASE,?DISPL
      BBSS POS,BASE,DISPL
DISPL:
      .ENDM SSB

```

```

:++
: CSB CLEARS A SINGLE BIT IN A FIELD.
:--

```

```

      .MACRO CSB POS,BASE,?DISPL
      BBCC POS,BASE,DISPL
DISPL:
      .ENDM CSB

```

```

:++
: FILLBUF FILLS A BUFFER WITH A SPECIFIED CHARACTER. ON COMPLETION
: R3 CONTAINS THE ADDRESS OF ONE BYTE BEYOND THE FILLED BUFFER. NOTE
: THAT THIS MACRO USES THE MOVCS INSTRUCTION WHICH DESTROYES R0 - R5!
: THE DEFAULT IS TO ZERO 512 BYTES (1 PAGE) AT THE SPECIFIED ADDRESS.
:--

```

```

      .MACRO FILLBUF DST=,SIZE=#512,CHAR=#X00
      MOVCS #0,,CHAR,SIZE,DST
      .ENDM FILLBUF

```

```

:++
: CHECK SS BRANCHES TO A SUBROUTINE THAT CHECKS THE STATUS CODE IN R0
: FOLLOWING A CALL TO A SYSTEM SERVICE.
:--

```

```
.MACRO CHECK_SS
BSBW  TST$CHECK_SS
.ENDM CHECK_SS
```

```
:++
: CHECK RMS BRANCHES TO A SUBROUTINE THAT CHECKS THE COMPLETION CODE IN R0
: FOLLOWING A CALL TO RMS.
:--
```

```
.MACRO CHECK_RMS
BSBW  TST$CHECK_RMS
.ENDM CHECK_RMS
```

```
:++
: CHECK IOSB BRANCHES TO A SUBROUTINE THAT CHECKS THE STATUS CODE OF THE
: SPECIFIED I/O STATUS BLOCK FOLLOWING A CALL TO THE QIO SYSTEM SERVICE.
:--
```

```
.MACRO CHECK_IOSB ADDRESS
MOVAQ ADDRESS,R0
BSBW  TST$CHECK_IOSB
.ENDM CHECK_IOSB
```

```
:++
: $CASEB, $CASEW, AND $CASEL GENERATE A CASEB, CASEW, CASEL INSTRUCTION,
: RESPECTIVELY, FOLLOWED BY THE CASE DISPLACEMENT TABLE. THE PARAMETERS
: FOR EACH MACRO ARE:
:   SELECTOR= THE SELECTOR OPERAND
:   BASE    = THE BASE OPERAND
:   (THE LIMIT OPERAND IS CALCULATED FROM THE # OF ENTRIES IN DISPL)
:   DISPL   = THE CASE DISPLACEMENT LIST
: NOTE THAT THE MACRO DEFINITIONS PLACE BASE AFTER SELECTOR AND DISPL
: SO THAT BASE CAN BE OMITTED WHEN KEYWORDS ARE NOT USED IN THE MACRO
: INVOCATION.
:--
```

```
.MACRO $CASEB,SELECTOR,DISPL,BASE=#0
$CASE SELECTOR,<DISPL>,BASE,TYPE=B
.ENDM $CASEB
```

```
.MACRO $CASEW,SELECTOR,DISPL,BASE=#0
$CASE SELECTOR,<DISPL>,BASE,TYPE=W
.ENDM $CASEW
```

```
.MACRO $CASEL,SELECTOR,DISPL,BASE=#0
$CASE SELECTOR,<DISPL>,BASE,TYPE=L
.ENDM $CASEL
```

```
:++
: $CASE IS A LEVEL 2 MACRO USED BY $CASEB, $CASEW, AND $CASEL.
: $CASE GENERATES A CASE[B/W/L] INSTRUCTION FOLLOWED BY THE CASE
: DISPLACEMENT TABLE. THE PARAMETERS FOR THE MACRO ARE:
:   TYPE    = OPERAND DATATYPE OF B, W, OR L
:   SELECTOR= THE SELECTOR OPERAND
:   BASE    = THE BASE OPERAND
```

```
: (THE LIMIT OPERAND IS CALCULATED FROM THE # OF ENTRIES IN DISPL)  
: DISPL = THE CASE DISPLACEMENT LIST  
: NOTE THAT THE MACRO DEFINITION PLACES SELECTOR AND DISPL AHEAD OF BASE  
: AND TYPE SO THAT THE LATTER CAN BE OMITTED WHEN KEYWORDS ARE NOT USED  
: IN THE MACRO INVOCATION.  
:--
```

```
.MACRO $CASE,SELECTOR,DISPL,BASE=#0,TYPE=B,?TABLE  
$$COUNT=0  
.IRP EP,<DISPL>  
$$COUNT=$$COUNT+1  
.ENDR  
.IF EQ,$$COUNT  
.ERROR : ***** CASE DISPLACEMENT LIST IS NULL ***** ;  
.MEXIT  
.ENDC  
CASE TYPE SELECTOR,BASE,#<$$COUNT-1>
```

TABLE:

```
.IRP EP,<DISPL>  
.WORD EP-TABLE  
.ENDR  
.ENDM $CASE
```

## .SBTTL SYMBOL DEFINITION MACROS

```

:++
: EFNDEF DEFINES THE USE OF EVENT FLAGS BY DTS/DTR.
: NOTE: MANY OF THE FLAG VALUES SERVE A DUAL PURPOSE; THEY ARE ALSO USED
: A FUNCTION/INDEX CODES THAT ARE MAPPED INTO THE APPROPRIATE QIO REQUEST
: SYSTEM SERVICE CALLS.
:--

```

```

.MACRO EFNDEF GBL
$DEFINI EFN,GBL
SEQULST EFN_K,GBL,,-<-
: EFN [AND FUNCTION/INDEX CODE] FOR:
: READ ASSOCIATED MAILBOX
: NSP CONNECT INITIATE
: NSP CONNECT ACCEPT (CONFIRM)
: NSP CONNECT REJECT
: NSP SYNCHRONOUS DISCONNECT
: NSP DISCONNECT ABORT
: NSP TRANSMIT DATA MESSAGE
: NSP TRANSMIT INTERRUPT MESSAGE
: NSP RECEIVE DATA MESSAGE
: TIMER AST
: SIGNALLING AN EVENT FROM AN AST
<READ_MAIL,0>-
<CONN_INIT,1>-
<CONN_ACCE,1>-
<CONN_REJE,2>-
<DISC_SYNC,3>-
<DISC_ABRT,4>-
<XMIT_DATA,5>-
<XMIT_INTE,6>-
<RCV_DATA,7>-
<TIMER,8>-
<SIGNAL,9>-
>
$DEFEND EFN,GBL
.ENDM EFNDEF

```

```

:++
: FLGDEF DEFINES OFFSETS AND MASKS FOR COMMAND PARSE STATUS FLAGS.
:--

```

```

.MACRO FLGDEF GBL
$DEFINI FLG,GBL
_VIELD FLG,0,-<-
: MEANING:
: PARSE ERROR DETECTED
: COMMAND LINE IS CONTINUED
: COMMAND PARAMETER FOUND
: COMMAND DELIMITER FOUND
<PARSEERR,,M>-
<MULTILINE,,M>-
<PARAMETER,,M>-
<DELIMITER,,M>-
>
$DEFEND FLG,GBL
.ENDM FLGDEF

```

```

:++
: CMDDEF DEFINES COMMAND LANGUAGE SYMBOLS.
:--

```

```

.MACRO CMDDEF GBL
$DEFINI CMD,GBL
:
: DEFINE COMMAND PARAMETER VALUES (TST$GB_TEST).
:
SEQULST VAL_K,GBL,,-<-
: TEST FUNCTION CODE:
: CONNECT TEST
: DATA TEST
: DISCONNECT TEST
: INTERRUPT TEST
<TEST_CONN,0>-
<TEST_DATA,1>-
<TEST_DISC,2>-
<TEST_INTE,3>-

```

```

> <TEST_MISC,4>- : MISCELLANEOUS TEST
>
:
: DEFINE /[NO]PRINT QUALIFIER VALUES (TST$GB_PRINT).
:
:   SEQULST VAL_K_GBL...<- : FUNCTION MODIFIER CODE:
:     <PRIN_NO,0>- : NOPRINT
:     <PRIN_YES,128>- : PRINT (BIT7 = 1)
:   >
:
: DEFINE /TYPE QUALIFIER VALUES (TST$GB_TYPE).
:
:   SEQULST VAL_K_GBL...<- : TEST SUBFUNCTION CODE:
:     <TYPE_REJE,0>- : CONNECT REJECT
:     <TYPE_ACCE,1>- : CONNECT ACCEPT (CONFIRM)
:     <TYPE_SINK,0>- : SINK (NO CHECKING)
:     <TYPE_SEQU,1>- : SEQUENCE CHECK
:     <TYPE_PATT,2>- : SEQUENCE AND PATTERN CHECK
:     <TYPE_ECHO,3>- : ECHO MESSAGE
:     <TYPE_SYNC,0>- : SYNCHRONOUS DISCONNECT
:     <TYPE_ABRT,1>- : DISCONNECT ABORT
:     <TYPE_NAME,0>- : INVALID NODENAME
:   >
:
: DEFINE /[NO]RETURN QUALIFIER VALUES (TST$GB_RETURN).
:
:   SEQULST VAL_K_GBL...<- : SUBFUNCTION MODIFIER CODE:
:     <RETU_NO,0>- : NORETURN USERDATA
:     <RETU_STAN,2>- : RETURN STANDARD USERDATA
:     <RETU_RECE,4>- : RETURN RECEIVED USERDATA
:   >
:
: DEFINE /[NO]FLOW QUALIFIER VALUES (TST$GB_FLOW).
:
:   SEQULST VAL_K_GBL...<- : FLOW CONTROL VALUE:
:     <FLOW_NO,0>- : NOFLOW CONTROL
:     <FLOW_SEGM,1>- : SEGMENT FLOW CONTROL
:     <FLOW_MESS,2>- : MESSAGE FLOW CONTROL
:   >
:
: DEFINE /[NO]STATISTICS QUALIFIER VALUES (TST$GB_STAT).
:
:   SEQULST VAL_K_GBL...<- : STATISTICS VALUE:
:     <STAT_NO,0>- : NOSTATISTICS
:     <STAT_YES,1>- : STATISTICS
:   >
:
: DEFINE /[NO]BACK QUALIFIER VALUES (TST$GB_BACK).
: DEFINE /[NO]DISPLAY QUALIFIER VALUES (TST$GB_DISPLAY).
: DEFINE /[NO]NAK QUALIFIER VALUES (TST$GB_NAK).
: EACH OF THESE ALSO TAKE EXPLICIT NUMERIC VALUES.
:
:   SEQULST VAL_K_GBL...<- :
:     <BACK_NO,0>- : NO BACK PRESSURE CONTROL
:     <DISP_NO,0>- : NO DISPLAY
:     <NAK_NO,0>- : NO NAK CONTROL

```



```
>
:
: DEFINE DEFAULT QUALIFIER VALUES.
:
```

```
$EQU*ST DFT K ,GBL , , <- : DEFAULT QUALIFIER VALUE FOR:
<BACK,VAL K BACK NO>- : BACK PRESSURE CONTROL
<DISPLAY,VAL K DISP NO>- : DISPLAY SIZE IN BYTES
<FLOW,VAL K FLOW MESS>- : FLOW CONTROL
<NAK,VAL K NAK NO>- : NAK CONTROL
<PRINT,VAL K PRIN NO>- : PRINT
<RETURN_CO,VAL K RETU_NO>- : RETURN USERDATA (CONNECT)
<RETURN_DI,VAL K RETU_NO>- : RETURN USERDATA (DISCONNECT)
<RQUEUE_DA,1>- : DTR QUEUE (DATA)
<RQUEUE_IN,1>- : DTR QUEUE (INTERRUPT)
<SIZE_DA,128>- : MESSAGE SIZE IN BYTES (DATA)
<SIZE_IN,16>- : MESSAGE SIZE IN BYTES (INTERRUPT)
```

```
>
$EQU*ST DFT K ,GBL , , <- : DEFAULT QUALIFIER VALUE FOR:
<SPEED,1000000>- : LINE SPEED IN BAUD
<SQUEUE_DA,1>- : DTS QUEUE (DATA)
<SQUEUE_IN,1>- : DTS QUEUE (INTERRUPT)
<STAT,VAL K STAT_YES>- : STATISTICS
<TIME_DA,030>- : TIME IN SECONDS (DATA)
<TIME_IN,030>- : TIME IN SECONDS (INTERRUPT)
<TYPE_CO,VAL K TYPE_ACCE>- : TYPE (CONNECT)
<TYPE_DA,VAL K TYPE_SINK>- : TYPE (DATA)
<TYPE_DI,VAL K TYPE_ABRT>- : TYPE (DISCONNECT)
<TYPE_IN,VAL K TYPE_SINK>- : TYPE (INTERRUPT)
<TYPE_MI,VAL K TYPE_NAME>- : TYPE (MISCELLANEOUS)
```

```
>
:
: DEFINE MAXIMUM QUALIFIER VALUES FOR THOSE QUALIFIERS THAT ACCEPT NUMERIC
: QUALIFIER VALUES.
:
```

```
$EQU*ST MAX K ,GBL , , <- : MAXIMUM QUALIFIER VALUE FOR:
<BACK,128>- : BACK PRESSURE CONTROL
<DISPLAY,38>- : DISPLAY SIZE IN BYTES
<NAK,128>- : NAK CONTROL
<RQUEUE_DA,8>- : DTR QUEUE (DATA)
<RQUEUE_IN,8>- : DTR QUEUE (INTERRUPT)
<SIZE_DA,4096>- : MESSAGE SIZE IN BYTES (DATA)
<SIZE_IN,16>- : MESSAGE SIZE IN BYTES (INTERRUPT)
<SPEED,1000000>- : LINE SPEED IN BAUD
<SQUEUE_DA,8>- : DTS QUEUE (DATA)
<SQUEUE_IN,8>- : DTS QUEUE (INTERRUPT)
<TIME_DA,360000>- : TIME IN SECONDS (DATA)
<TIME_IN,360000>- : TIME IN SECONDS (INTERRUPT)
```

```
>
$DEFEND CMD,GBL
.ENDM CMDDEF
```

```
:
: **
: VLDDEF DEFINE OFFSETS AND MASKS FOR VALID (PERMITTED) QUALIFIER FLAGS
: IN TST&GL_VALID.
:
:--
```

```
.MACRO VLDDEF GBL
$DEFINI VLD,GBL
_VIELD VLD,0,<-
: QUALIFIER:
: BACK
: DISPLAY
: FLOW
: HOURS
: MINUTES
: NAK
: NOBACK
: NODENAME
: NODISPLAY
: NOFLOW
: NONAK
: NOPRINT
: NORETURN
: NOSTATISTICS
: PRINT
: RETURN
: DTR QUEUE
: SECONDS
: SIZE
: SPEED
: DTS QUEUE
: STATISTICS
: TYPE
:
>
$DEFEND VLD,GBL
.ENDM VLDDEF
.END
```



