

ALSO AVAILABLE . . .

. . . THE TL/1 ON-LINE QUICK REFERENCE FILE

When Editing A TL/1 Program

1. Press the Help key on the Programmer's Keyboard
2. Use the SEARCH softkey to move directly to the command you want or use the Up or Down Arrow keys to move through the TL/1 On-Line Quick Reference File.
3. Press the Help key to exit the TL/1 On-Line Quick Reference File.

When Outside the Editor

1. Press the EDIT key on the Operator's Keypad.
2. Press the Edit key on the Programmer's Keyboard and enter the pathname for a program. For example:
/hdr/abc/test10 (Then press the Return key.)
3. Press the Field Select key until the TYPE field shows PROGRAM (Then press the Return key.)
4. Press the Help key on the Programmer's Keyboard.
5. Use the SEARCH softkey to move directly to the command you want or use the Up or Down Arrow keys to move through the TL/1 On-Line Quick Reference File.
6. Press the Help key to exit the TL/1 On-Line Quick Reference File.

This Quick Reference Card supports software versions up to and including 6.0. Commands followed by a number in parentheses indicate the software version at which the command was first implemented.

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POD-RELATED COMMANDS**Using Pod Parameters**

getspace	Get the number corresponding to a specified UUT address space
setspace	Set UUT address space
syspspace	Get current UUT address space
podinfo	Get information about the current address space
sysdata	Get last data read or written
sysaddr	Get last address used
podsetup	Set pod parameters
getpod	Get pod name (4.1)

Test The Bus and Memory

testbus	Test the microprocessor bus
testramfast	Perform a fast test of RAM
testramfull	Perform a full test of RAM
pretestram	Perform a very fast pretest of RAM
diagnoseram	Perform a post-process fault analysis of RAM
testromfull	Perform a full test of ROM
getromsig	Gather signature from ROM
diagnoserom	Perform a fault analysis of ROM (6.0)

Read and Write

loadblock	Copy data from UUT text file to UUT address with offset (4.0)
read	Read data in current UUT address space
readblock	Copy data from UUT addresses to a text file
readstatus	Read microprocessor status lines
readvirtual	Read data from specified virtual address(4.0)
write	Write data in current UUT address space
writeblock	Copy data from a text file to UUT addresses
writecontrol	Set microprocessor control lines
writefill	Write the same data to a range of UUT addresses
writevirtual	Write data to specified virtual address (4.0)

Rotate, Ramp, and Toggle Bits

rotate	Rotating pattern of data bits written to an address
rampdata	Ramp pattern of data bits written to an address
toggledata	Toggle pattern of data bits written to an address
rampaddr	Read with ramped pattern of address bits
toggleaddr	Read with toggled pattern of address bits
togglecontrol	Toggle specified control bits

RUN UUT Mode

runuut	Place pod in RUN UUT mode
runuutspecial	Place pod in RUN UUT mode starting at the specified virtual address
runuutvirtual	Start runuut at specified virtual address (4.0)
waituut	Suspend TL/1 program while in RUN UUT mode
haltuut	End RUN UUT mode
polluut	Check to see if RUN UUT is active

PROBE AND I/O MODULE COMMANDS**Configure I/O Module or Probe for Measurement**

counter	Set counter mode
edge	Set active edges for external sync
enable	Set enable mode for external sync
reset	Reset to default mode
stopcount	Set number of enabled clock pulses for measurement
sync	Set synchronization mode
threshold	Set input threshold levels

Attach Probe or I/O Module to UUT

probe	Prompt operator to place probe
assign	Reset connection data for I/O module
assoc	Associate a UUT part with an I/O module
clip	Prompt operator to clip a UUT part with an I/O module
connect	Prompt operator to connect external sync lines

Perform Measurement With I/O Module or Probe

arm	Arm measurement hardware
checkstatus	Check if measurement complete
strobeclock	Strobe internal clock for probe or I/O module
readout	Get data from measurement
pollbutton	Poll for button press (4.0)
readbutton	Return device name of button press (4.0)

Read Measurement Taken for One UUT Component Pin

count	Get count or frequency
level	Get level history
sig	Get CRC signature

Probe Stimulus

pulser	Set probe pulser mode
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I/O Module Stimulus

clearoutputs	Turn off output drivers
clearpatt	Discard output patterns
storepatt	Set output patterns to be written
writepatt	Write output patterns to UUT
writepin	Latch or pulse level on a single pin

I/O Module Word Recognition

compare	Set bit pattern to be compared with I/O module input
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Get or Set Delay for I/O Module or Probe

getoffset	Read current delay offset value
setoffset	Set new delay offset value
restorecal	Restore calibration values (4.0)

Read/Write I/O Module User Words

readword	Read user I/O module word (4.1)
setword	Set pin of user I/O module word (4.1)
writeword	Write user I/O module word (4.1)

Vector Output I/O Module

clockfreq	Set internal drive clock frequency (4.1)
drivepoll	Check if vector drive complete (4.1)
edgeoutput	Set active edges for vector driving (4.1)
enableoutput	Set enable mode for vector driving (4.1)
strobeoutclock	Strobe internal vector drive clock (4.1)
syncoutput	Set drive synchronization mode (4.1)
vectordrive	Start vector driving (4.1)
vectorload	Load a vector file (4.1)

COMMANDS USING FAULT CONDITIONS

handle	Beginning of handler definition block
end handle	End of handler definition block
exercise	Beginning of exerciser definition block
end exercise	End of exerciser definition block
fault	Generate a fault condition
refault	Generate a fault condition in the calling program

GFI COMMANDS

gfi accuse	Get GFI accusation of the fault
gfi autostart	Automatically start GFI (4.0)
gfi clear	Reset GFI for a new type of UUT
gfi control	Determine if program is being executed under GFI control
gfi device	Get name of GFI measurement device
gfi fail	Force a pin or ref to fail
gfi hint	Add a pin name to the end of the GFI suggestion list
gfi pass	Force a pin or ref to pass
gfi ref	Get name of the component pin being tested by GFI
gfi status	Get the status of a pin
gfi suggest	Get the next pin name in the GFI suggestion list
gfi test	Test the specified pin using the GFI database
dbquery	Get information from a compiled UUT database (4.1)

MISCELLANEOUS

random	Get a random number (4.1)
cwd	Get current execution directory (4.1)

PROGRAM STRUCTURE

program <program name> [**<**<argument list>**>**]

<<Declaration Blocks>

<<Function Definition Blocks>

<<Fault Handler Definition Blocks>

<<Fault Exerciser Definition Blocks>

<<Executable TL/1 Commands>

end program

DATA TYPES, CONSTANTS, AND VARIABLES

Data Types

Numeric	32-bit positive integers
Floating	14-digit precision floating-point
String	0-255 character strings

Examples of Constants

1234	Decimal numeric constant
\$FF	Hexadecimal numeric constant
3.278	Floating-point constant
1.23E-4	Floating-point constant using exponential notation
"example"	Character string
"\1B"	String containing a control code

Variable Names

- Must begin with a letter (or @ or _)
- May contain letters, numbers, or the characters @, \$, or _
- May not be a keyword
- Maximum of 255 characters
- Names surrounded with single quotes can contain punctuation or spaces

Declaring Variables and Assigning Values

declare...	Declare a single variable
declare	Beginning of declaration block
end declare	End of declaration block
(assignment)	(Use the "=" symbol)

Persistent Variable Commands

clearpersvars	Set all persistent variables to zero values (5.0)
resetpersvars	Empty the persistent variable set (5.0)

FLOW-OF-CONTROL COMMANDS

Program and Function Definition

program	Beginning of program definition block
end program	End of program definition block
function	Beginning of function definition block
end function	End of function definition block

Transfer of Control

abort	Abort TL/1 execution(4.0)
execute	Call a program or function
return	Return to caller
goto	Transfer control to labelled line
wait	Stop execution for specified time

Conditional Statements

if...then...	if...then statement
if...then	Beginning of if Block
end if	End of if block
if...passes then	Take action if called test passes
if...fails then	Take action if called test fails
loop until...	Beginning of loop until block
loop while...	Beginning of loop while block
loop for...	Beginning of loop for block
loop	Beginning of infinite loop block
end loop	End of any kind of loop block
for	Beginning of for...next block (same as loop for...)
next	End of for...next block

SYSTEM ACCESS FUNCTIONS

readtime	Format time info from systime number
readdate	Format date info from systime number
systime	Get system elapsed time in seconds
sysinfo	Get information about the system (6.0)

MATH FUNCTIONS

fabs	absolute value
sqrt	square root
pow	exponential
log	logarithm (base may be specified)
sin	sine
cos	cosine
tan	tangent
asin	inverse sine
acos	inverse cosine
atan	inverse tangent
natural	returns value of a natural constant

INPUT, OUTPUT, AND FILE OPERATIONS

open	Open channel to I/O device or file
close	Close channel to I/O device or file
input	Reads data from specified channel
input using	Reads formatted data from specified channel
print	Outputs data to specified channel
print using	Outputs formatted data to specified channel
poll	Examine the status of a channel
delete	Delete a text file
filestat	Return file status(4.1)
ieee	Controls the IEEE-488 interface (5.0)
edisk	Create or delete an E-disk (5.0)

GRAPHICS COMMANDS

Graphics Definition and Deletion

define part	Define a part shape
remove part	Delete a part shape definition
define ref	Associate a reference designator with a part shape and window location
remove ref	Delete a reference designator definition
define text	Define text to be displayed
remove text	Delete a text definition
define mode	Define how a test mode is displayed
remove mode	Delete test mode definition

Window Commands

winctl	Control window position
draw	Draw UUT parts and text on a window
draw ref	Draw UUT parts on a window
draw text	Draw previously defined text on a window

Menu Commands

define menu	Define menu or menu item
remove menu	Delete menu or menu item
readmenu	Input from a menu

OPERATORS

Arithmetic Operators

+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Remainder (numeric only)
-	Unary minus (floating-point only)

Relational Operators

=	Equal to
<>	Not equal to
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to

Logical Operators

not	Logical negation
and	Logical AND
&	Logical AND
or	Logical OR
	Logical OR
xor	Logical exclusive-OR
^	Logical exclusive-OR
cpi	One's complement
~	One's complement

Bit Shifting Operators

shl	Shift left
<<	Shift left
shr	Shift right
>>	Shift right

Bit Mask Operators

setbit	Set any bit
bitmask	Set bits up to nth bit
lsb	Return position of lsb set
msb	Return position of msb set

String Operators

+	Append string to another
instr	Return position of specified sub-string
len	Count characters in operand
mid	Copy a sub-string from operand
token	Scan fields in a string (5.0)

Type Conversion Operators

chr	Convert numeric to a single ASCII character
ascii	Convert a single-character string to its ASCII code number
clft	Convert numeric to floating
cnum	Convert floating to numeric
val	Convert string to numeric
fval	Convert string to floating
str	Convert numeric to string
fstr	Convert floating to string
isval	Test whether val would fail (5.0)
isflt	Test whether fval would fail (5.0)