

INDEX

! (prefix character for name property) 4-11
" (double quote string delimiter) 4-10
\$ (signal class/name separator) 4-11
% (text macro delimiter) 4-50, 4-74
' (single quote string delimiter) 4-10
* (low assertion character) 4-10
- (negation symbol) 4-10
: (concatenation character for signals) ... 4-10, 4-21
< (start character for bit subscript) 4-10
> (end character for bit subscript) 4-10
\ (prefix character for general property) . 4-10, 4-40
{ } (comment delimiter) 4-8, 4-11, 8-31
~ (continuation character) 4-8, 8-31
54LSTTL Library 11-68

A

A SIZE PAGE body 11-101
ABBREV property 4-52
ADD command 3-8, 3-47
ALLOW_CONNECT property 8-15, 8-30
ALSTTL Library 11-201
ANNOTATE directive 8-35
AMD1850 Library 11-168
Assertion 4-14, 6-12
 clock 6-8
 definition 7-14
 level 4-9, 4-14
 signal 4-14, 6-8, 6-9
 timing 4-11
ASSIGN command 3-48
ASTTL Library 11-199
AUTO command 3-50

B

B SIZE PAGE body 11-101
BACKANNOTATE command 3-51, 3-153
Baud rate 2-11
BIDIRECTIONAL property 8-13, 8-29
BINARY_TRACE directive 7-40
Bit ordering 4-18, 11-4
 left-to-right 4-18, 4-19, 4-20
 lsb 11-4
 msb 11-4
 right-to-left 4-18, 4-19, 4-20
 step increment 4-19

Index

- Bit subscript 4-12
 - end character (>) 4-12
 - start character (<) 4-12
 - step increment 4-13
 - Bodies
 - see Special SCALD Bodies
 - BODY_TYPE property 4-53
 - BUBBLE command 3-52
 - Bubble groups 3-140, 3-141
 - BUBBLE_CHECK directive 5-19
 - BUBBLE_GROUP property 3-140
 - BUBBLED property 3-141, 4-54
 - BUS command 7-13, 7-27
- C
- C8000 Library 11-131
 - Case analysis 6-7, 6-71
 - Case file 6-73
 - CHANGE command 3-53
 - CHECK command 3-55
 - CHIP_DELAY property 4-15, 6-13
 - CIRCLE command 3-56
 - CLEAR command 7-16, 7-18, 7-20, 7-27
 - Clock 6-8, 6-9
 - CLOCK command 7-27
 - CLOCK_DELAY property 6-13
 - CLOCK_INTERVALS directive 6-60, 7-40
 - CLOCK_PERIOD directive 6-60, 7-40
 - CLOCK_SKEW directive 6-9, 6-61
 - CMOS Library 11-213
 - CMS_FILE_MODE directive 12-4
 - COMMAND_FILE directive 7-41
 - Commands
 - see specific command or program name
 - COMMENT_BODY property 4-55
 - COMPARE command 7-28
 - COMPILE directive 5-20
 - Compiler
 - directives 5-19
 - BUBBLE_CHECK 5-19
 - COMPILE 5-20
 - CONST_BUBBLE_CHECK 5-21
 - DIRECTORY 5-4, 5-21
 - ERROR_HELP 5-5, 5-22
 - FILTER_PROPERTY 4-47, 5-22
 - LIBRARY 5-22
 - MASTER_LIBRARY 5-23
 - MAX_ERRORS 5-24
 - OUTPUT 5-24
 - OVERSIGHTS 5-25
 - PASS_PROPERTY 5-25
 - PERMIT_NO_ASSERT 5-26

directives (con't)
 PRIMITIVE 5-26
 PRINT_WIDTH 5-28
 PROPERTY_FILE 5-27
 REPORT 5-28
 ROOT_DRAWING 5-4, 5-29
 SINGLE_DRAWING 5-30
 SUPPRESS 5-31
 TEXT_MACRO_FILE 5-31
 WARNINGS 5-32
 error detection
 errors 5-58
 oversights 5-58
 warnings 5-58
 separate compilation 5-34
 example 5-38
 limitations 5-36
 Compiler directives file 5-6, 5-33
 compiler.cmd 5-43
 example 5-33
 Compiler input files 5-6
 Compiler output files 5-7
 COMPILER_OUTPUT directive 7-41
 CONST_BUBBLE_CHECK directive 5-21
 Continuation character (~) 4-8, 8-31
 COPY command 3-57
 COPY_FILES directive 12-5
 Crash recovery 3-125
 CRT display 3-4
 cross-hair cursor 3-5, 3-8, 3-11
 Cursor
 see CRT display
 Cursor buttons
 blue 3-32, 3-33, 3-39
 green 3-32, 3-34, 3-39
 white 3-32, 3-34, 3-39
 yellow 3-5, 3-32, 3-39
 CURSOR command 7-13, 7-28
 Cursor Puck
 see Graphics tablet
 CUT command 3-58

D

DEBUG directive 9-62
 DECAY_TIME directive 7-7, 7-41
 DEFAULT_DRIVE directive 6-61
 DEFINE_body 11-101
 DEFINE_property 4-72
 DELAY_ESTIMATOR directive 6-62

Index

Delays	
calculated	6-76
component	6-8
default values	6-76
estimated	6-76, 6-79
wire	6-76
DELETE command	3-59
Delimiters	
comment ({})	4-8, 4-11, 8-31
strings	
double quote (")	4-10
single quote (')	4-10
text macro (%)	4-50, 4-74
Demergers	4-24
see also MERGE body	
DEPOSIT command	7-28
Design data base	3-3
Design station	
see Work station	
DIAGRAM command	3-60, 3-124
DIAL	
directives	
DEBUG	9-62
HEADER_FILE	9-63
INCLUDE_IO_LIST	9-63
INTERFACE_TYPE	9-63
LIBRARY_FILE	9-62
MAX_ERRORS	9-64
NET_NAME_LENGTH	9-65
OVERSIGHTS	9-64
PART_NAME_LENGTH	9-65
SINGLE_NODE_NETS	9-63
SUPPRESS	9-64
WARNINGS	9-64
program templates	
IBM	9-80
UNIX	9-75
VAX	9-68
routines	
directive	9-60
initialization	9-62
node list	9-56
physical net	9-58
physical part	9-59
string	9-22
table structure	9-20
FIND_LOGICAL_NET	9-20
FIND_LOGICAL_PART	9-20
FIND_PART_TYPE	9-21
FIND_PHYSICAL_NET	9-20
FIND_PHYSICAL_PART	9-21

- structures
 - drawing names 9-8
 - logical parts 9-9
 - logical pins 9-10
 - nets 9-11
 - nodes 9-11
 - part types 9-12
 - physical parts 9-16
 - physical sections 9-17
 - pin defs 9-14
 - section defs 9-16
 - section pins 9-16
 - size expanded parts 9-10
 - utilities
 - debugging 9-43
 - error reporting 9-39
 - general 9-45
 - heap management 9-49
 - input/output 9-28
 - parsing 9-38
 - sorting 9-52
 - DIRECTORY command 3-61
 - DIRECTORY directive 5-4, 5-21, 12-5
 - DISPLAY command 3-62
 - DOT command 3-65
 - DOT TYPE directive 6-62
 - DRAWING body 3-123, 11-101
 - Drawing name extensions
 - BODY 5-13
 - LOGIC 5-12, 5-14
 - PART 5-14
 - PRIM 5-15
 - SIM 5-12, 5-14
 - TIME 5-12, 5-14
- E**
- ECL 100k Library 11-31
 - ECL 10k Library 11-35
 - EDIT command 3-66
 - EQUATE command 7-16, 7-18, 7-20, 7-28
 - ERASE command 7-29
 - ERROR command 3-55, 3-67
 - ERROR_HELP directive 5-5, 5-22
 - Errors
 - see specific program name
 - Escape sequences 2-12
 - ANSI 2-15
 - Valid extensions 2-17
 - VT52 2-22
 - EXIT command 7-29
 - EXPR property 4-56
 - Extended file system 12-17

Index

F

FAMILY property	8-29
FAST Library	11-53
FEEDBACK_ORDER directive	8-25, 8-35
Filecopy program	
directives	
CMS_FILE_MODE	12-4
COPY_FILES	12-5
DIRECTORY	12-5
HOST_DESTINATION	12-6
HOST_KIND	12-6
OUTPUT_FILE_LIST	12-7
REPORT_FILES	12-8
TRANSFER_LOG	12-8
directives file	12-4
examples	12-9
filecopy.cmd	12-4
FILENOTE command	3-68, 3-135
Files	
ASCII	3-124
backann.cmd	3-51
backannotation	3-153, 8-9, 8-26, 8-35
binary	3-124, 3-142
body	3-142, 3-145
chips.dat	3-131, 5-8, 8-29
cmpexp.dat	9-67
cmplog.dat	5-7
cmplst.dat	5-8
cmpsyn.dat	5-8
compiler.cmd	5-43
config.dat	3-120, 11-6
connectivity	3-124, 3-142, 3-147
dependency	3-124, 3-126, 3-142, 3-152
editor.log	3-172
filecopy.cmd	12-4
FILECOPY.LIST	12-7, 12-13
formats	3-142
logic	3-142
logical changes	8-8, 8-27
master.lib	3-120
packager.cmd	8-35
plotsig.dat	6-85
property.dat	5-4
pstback.dat	3-51
removal	3-90
scald.cmd	10-8
simulate.cmd	7-4
softkeyassign	3-120
startup.ged	3-120, 3-121
synonyms	4-6, 4-7, 4-8
temporary	3-92, 3-125

Files (con't)	
textmacro.dat	5-4
timing.timing	6-86
undo.log	3-122
vector.dat	3-112
verifier.cmd	6-49
File transfer	
RS-232	12-15
walknet	12-13
FILTER_PROPERTY directive	4-47, 5-22, 8-36
FIND command	3-69
FLAG body	11-103
FORMAT command	3-70, 3-125, 3-133, 3-137, 3-138
G	
GET command	3-71
Glossary	
Packager	8-95
Timing Verifier	6-89
Graphics Editor	3-3
bubble groups	3-140
command menu	3-4
command syntax	3-43
commands	
ADD	3-8, 3-47
ASSIGN	3-48
AUTO	3-50
BACKANNOTATE	3-51, 3-153
BUBBLE	3-52
CHANGE	3-53
CHECK	3-55
CIRCLE	3-56
COPY	3-57
CUT	3-58
DELETE	3-59
DIAGRAM	3-60, 3-124
DIRECTORY	3-61
DISPLAY	3-62
DOT	3-65
EDIT	3-66
ERROR	3-55, 3-67
FILENOTE	3-68, 3-135
FIND	3-69
FORMAT	3-70, 3-125, 3-133, 3-137, 3-138
GET	3-71
GRID	3-24, 3-72
GROUP	3-74
HARDCOPY	3-75, 3-128
HELP	3-77
IGNORE	3-78
LIBRARY	3-79
MIRROR	3-80

Index

commands (con't)	
MOVE	3-13, 3-81
NEXT	3-69, 3-82
NOTE	3-83, 3-135
PASTE	3-84
PINSWAP	3-85, 3-130
PROPERTY	3-86
QUIT	3-87
REATTACH	3-88
REDO	3-89, 3-122
REMOVE	3-90
REPLACE	3-91
RETURN	3-93
ROTATE	3-94
SCALE	3-95, 3-135
SCRIPT	3-96
SECTION	3-97, 3-130
SET	3-75, 3-98, 3-125
SHOW	3-102
SIGNAME	3-104
SIMULATE	7-39
SMASH	3-105, 3-124
SPLIT	3-106
SWAP	3-107
UNDO	3-108, 3-122
UPDATE	3-109
USE	3-111, 3-122
VECTORIZE	3-112
VERSION	3-113
WINDOW	3-16, 3-114
WIRE	3-116
WRITE	3-119
crash	
recovering files	3-125
grid	3-22
script commands	
FORCEADD	3-128
FORCENOTE	3-129
FORCEQUIT	3-129
FORCESIG	3-129
SCRIPT	3-128
status line	3-4
timing diagrams	6-85
UNIX commands	
restore	3-92, 3-125
update	3-126, 3-127
Graphics tablet	3-5
cursor puck	3-5
buttons	3-5
blue	3-32, 3-33, 3-39
green	3-32, 3-34, 3-39
white	3-32, 3-34, 3-39
yellow	3-5, 3-32, 3-39

GRID command 3-24, 3-72
 GROUP command 3-74

H

HARDCOPY command 3-75, 3-128, 7-29
 HAS_FIXED_SIZE property 4-57
 HCA6348 Library 11-190
 HCMOS Library 11-206
 HEADER_FILE directive 9-63
 HELP command 3-77
 Help facility 2-30
 HILO Library 11-181
 HISTORY command 7-13, 7-29
 HOST_DESTINATION directive 12-6
 HOST_KIND directive 12-6

I

IGNORE command 3-78
 INCLUDE_IO_LIST directive 8-37, 9-63
 Inherited properties 4-44, 4-45
 INPUT_LOAD property 8-15, 8-29
 Interface program
 directives 10-8
 input files 10-8
 output files 10-3
 concise body ordered net list 10-7, 10-12
 concise net list 10-4, 10-11
 concise parts list 10-5, 10-11
 power and ground list 10-6, 10-13
 stuff list 10-5, 10-13
 INTERFACE_TYPE directive 9-63
 INTERVAL command 7-29

K

Keyboard

 see work station

Keys

 control 2-12
 escape 2-12
 keypad 2-13
 left function 2-5, 2-7
 right function 2-5, 2-7, 2-24
 top function 2-5, 2-7
 programmable 2-19, 3-48, 3-49

L

LAST_MODIFIED property 3-123
 LATCH command 7-16, 7-18, 7-20, 7-29
 LATCH_ERR_MODEL directive 6-62

Index

Libraries	
54LSTTL	11-68
ALSTTL	11-201
AMD1850	11-168
ASTTL	11-199
C8000	11-131
CMOS	11-213
ECL 100K	11-31
ECL 10K	11-35
FAST	11-53
HCA6348	11-190
HCMOS	11-206
HILO	11-181
LS15KC	11-75
LS15KF	11-82
LSTTL	11-40
MCA12	11-150
MCLDL	11-164
MEMORY	11-95
MM74C	11-222
PHANTOM	11-106
SIM	11-113
STANDARD	11-101
STTL	11-61
TEGAS5	11-119
TIME	11-108
TTL	11-204
LIBRARY command	3-79
LIBRARY directive	5-22
Library directory	11-24
LIBRARY_FILE directive	8-37, 9-62, 10-9
Linker	5-34
LIST command	7-17, 7-20, 7-29
LIST_BYNAME directive	6-63
LIST_CHIP directive	6-63
LIST_DOT directive	6-63
LIST_HISTOGRAM directive	6-63
LIST_NC directive	6-63
LIST_TRANINPUT directive	6-63
LIST_UNNAMED directive	6-63
LIST_VIOLATIONS directive	6-63
LOADMEMORY command	
see MEMLOAD command	
LOCATION property	8-20
LOCATION_CLASS property	8-21
Logic Simulator	
batch	7-3, 7-20
command file	7-3
commands	
BUS	7-13, 7-27
CLEAR	7-16, 7-18, 7-20, 7-27
CLOCK	7-27
COMPARE	7-28

- commands (con't)
- CURSOR 7-13, 7-28
 - DEPOSIT 7-28
 - EQUATE 7-16, 7-18, 7-20, 7-28
 - ERASE 7-29
 - EXIT 7-29
 - HARDCOPY 7-29
 - HISTORY 7-13, 7-29
 - INTERVAL 7-29
 - LATCH 7-16, 7-18, 7-20, 7-29
 - LIST 7-17, 7-20, 7-29
 - LOADMEMORY
 - see MEMLOAD
 - LOGIC_INIT 7-14, 7-31
 - MEM_INIT 7-14, 7-31
 - MEMLOAD 7-31
 - MEMPATH 7-31
 - NEXTMEMORY 7-32
 - OPEN 7-13, 7-32
 - OPENMEMORY 7-15, 7-32
 - PAUSE 7-33
 - PERIOD 7-33
 - PLOT 6-87, 7-33
 - RADIX 7-33
 - REDISP 7-33
 - REMOVE 7-33
 - RESUME 7-34
 - ROW 7-13, 7-34
 - SAMPLE 7-16, 7-18, 7-20, 7-34
 - SCOPE 7-34
 - SCRIPT 7-34
 - SET 7-16, 7-18, 7-20, 7-35
 - SHOW 7-35
 - SIMULATE 7-15, 7-35
 - SNAPSHOT 7-20, 7-35
 - STEP 7-36
 - TERMINAL 7-36
 - TRACE 7-36
 - UPDATE 7-38
 - WAVEFORMS 7-12, 7-38
- directives
- BINARY_TRACE 7-40
 - CLOCK_INTERVALS 7-40
 - CLOCK_PERIOD 7-40
 - COMMAND_FILE 7-41
 - COMPILER_OUTPUT 7-41
 - DECAY_TIME 7-7, 7-41
 - LOGIC_STATE 7-42
 - MEM_STATE 7-42
 - OUTPUT 7-42
 - REALCHIP_LIBRARY 7-42
 - SESSION_LOG 7-42
 - SYNONYM_FILE 7-43

Index

- directives (con't)
 - TABULAR TRACE 7-43
 - TERMINAL 7-43
 - USE IF 7-43
- directives file 7-44, 7-47
- display formats 7-7
 - bus mode 7-7, 7-10
 - echo area 7-8
 - status lines 7-8
 - values 7-8
 - waveforms mode 7-7, 7-10
- models 7-67
- primitives 7-68
- sample session 7-46
- signal states 7-4
- synonyms file 4-6
- terminal types 7-7
- Logic Simulator output files 7-21
- LOGIC_INIT command 7-14, 7-31
- LOGIC_STATE directive 7-42
- Logical changes file 8-8, 8-27
- Low assertion character (*) 4-10
- LS15KC Library 11-75
- LS15KF Library 11-82
- lsb 11-4
- LSB TAP body 11-102
- LSTTL Library 11-40

- M**

- MASTER_LIBRARY directive 5-23
- MAX_ERRORS directive 5-24, 6-64, 8-37, 9-64
- MAX_EVAL_PASSES directive 6-64
- MAX_EXP_ERRORS directive 6-65
- MCA12 Library 11-150
- MCLDL Library 11-164
- MEM_INIT command 7-14, 7-31
- MEM_STATE directive 7-42
- MEMLOAD command 7-31
- MEMORY Library 11-95
- MEMPATH command 7-31
- Menu
 - Graphics Editor 3-4
 - setup screen 2-8
 - window manager 2-26
- MERGE body 4-24, 11-29, 11-101
- MIRROR command 3-80
- MM74C Library 11-222
- MOVE command 3-13, 3-81
- msb 11-4
- MSB TAP body 11-102
- Multibit signal
 - see Vector

N

NC SIGNALS directive 6-65
 NEEDS_NO_SIZE property 4-51, 4-58
 Negation symbol (-) 4-10
 Net checks 8-13
 Net list
 concise 10-4, 10-11
 concise body order 10-7, 10-12
 expanded 8-8, 8-27, 8-59
 feedback 8-33
 NET_NAME_LENGTH directive 8-41, 9-65
 NEXT command 3-69, 3-82
 NEXTMEMORY command 7-32
 NO_IO_CHECK property 8-13, 8-29
 NO_LOAD_CHECK property 8-17, 8-29
 NOASSERT property 4-59
 NOT body 4-25, 11-28, 11-101
 NOTE command 3-83, 3-135
 NOWIDTH property 4-53, 4-60
 NS_PER_CM directive 6-86
 NS_PER_INCH directive 6-86
 NS_PER_TICK directive 6-86

O

OPEN command 7-13, 7-32
 OPENMEMORY command 7-15, 7-32
 ORIGIN body 3-123, 11-26, 11-102
 Orthogonal wiring 3-116, 3-118
 OUTPUT directive 5-24, 6-85, 7-42, 8-38, 10-9
 OUTPUT_FILE_LIST directive 12-7
 OUTPUT_LOAD property 8-13, 8-15, 8-29
 OUTPUT_TYPE property 8-14, 8-30
 OVERSIGHTS directive 5-25, 8-39, 9-64

P

Packager

cross references
 controlling output 8-83
 conventions 8-86
 global part 8-80, 8-85
 global signal 8-82, 8-85
 local part 8-78, 8-84
 directives
 ANNOTATE 8-35
 FEEDBACK_ORDER 8-25, 8-35
 FILTER_PROPERTY 8-36
 INCLUDE_IO_LIST 8-37
 LIBRARY_FILE 8-37
 MAX_ERRORS 8-37

Index

directives (con't)	
NET_NAME_LENGTH	8-41
OUTPUT	8-38
OVERSIGHTS	8-39
PART_NAME_LENGTH	8-40
PART_TABLE_FILE	8-40
PASS_PROPERTY	8-40
REPORT	8-41
SINGLE_NODE_NETS	8-41
SUPPRESS	8-41
USE_STATE_FILES	8-42
WARNINGS	8-42
directives file	8-43
glossary	8-95
logical changes file	8-4, 8-27
net checks	8-13
net list	8-3, 8-59
parts list	8-3, 8-62
state files	8-3, 8-7, 8-27, 8-88
wire-gate	8-11
wire-tie	8-11
Packager input files	8-4
Packager output files	8-7, 8-27
PART_NAME property	4-62
PART_NAME_LENGTH directive	8-40, 9-65
Parts list	
concise	10-5, 10-11
expanded	8-27, 8-62
PART_TABLE_FILE directive	8-40
PASS_PROPERTY directive	4-47, 5-25, 8-40
PASTE command	3-84
PATH property	4-63, 8-86
Pathname	12-17
PAUSE command	7-33
PERIOD command	7-33
PERMIT_NO_ASSERT directive	5-26
PHANTOM Library	11-106
PHYS_DES_PREFIX property	8-30
PIN_GROUP property	8-19, 8-22, 8-30, 8-55
PIN_NAME property	3-123
PIN_NAMES body	11-103
PIN_NUMBER property	8-10, 8-19, 8-29, 8-44

Pins	
bus through	4-31
properties	4-40, 8-29
ALLOW CONNECT	8-15, 8-30
BIDIRECTIONAL	8-13, 8-29
NO IO CHECK	8-13, 8-29
INPUT_LOAD	8-15, 8-29
NO_LOAD_CHECK	8-17, 8-29
OUTPUT_LOAD	8-15, 8-29
OUTPUT_TYPE	8-14, 8-30
PIN_GROUP	8-19, 8-22, 8-30, 8-55
PIN_NUMBER	8-10, 8-19, 8-29, 8-44
UNKNOWN_LOADING	8-18, 8-29
WIRE_GATE_OUTPUT	8-30
unused	4-29
PINSWAP command	3-85, 3-130
PLOT command	6-87, 7-33
PLOTTIME	7-7
directives	
INPUT	6-85
NS_PER_CM	6-86
NS_PER_INCH	6-86
NS_PER_TICK	6-86
OUTPUT	6-85
SIGNALS_PER_PAGE	6-86
directives file	6-85
files	
plotsig.dat	6-85, 6-86
td.cmd	6-85
timing.timing	6-86, 6-87
POWER_PINS property	8-29
PREC_CLOCK_SKEW directive	6-9, 6-65
PRIMITIVE directive	5-26
PRINT_WIDTH directive	5-28, 6-65
Programmable keys	3-48
Properties	
body	3-151, 4-41
FAMILY	8-29
LOCATION	6-81, 8-20
LOCATION_CLASS	8-21
NO_IO_CHECK	8-13, 8-29
NO_LOAD_CHECK	8-17, 8-29
PHYS_DES_PREFIX	8-30
POWER_PINS	8-29
UNKNOWN_LOADING	8-18, 8-29
WIRE_GATE	8-30
Graphics Editor	
LAST_MODIFIED	3-123
PIN_NAME	3-123
SIG_NAME	3-123

Index

Properties (con't)

inherited	4-44, 4-45
pin	4-40
ALLOW_CONNECT	8-15, 8-30
BIDIRECTIONAL	8-13, 8-29
INPUT_LOAD	8-15, 8-29
NO_IO_CHECK	8-13, 8-29
NO_LOAD_CHECK	8-17, 8-29
OUTPUT_LOAD	8-13, 8-15, 8-29
OUTPUT_TYPE	8-14, 8-30
PIN_GROUP	8-19, 8-22, 8-30, 8-55
PIN_NUMBER	8-10, 8-19, 8-29, 8-44
UNKNOWN_LOADING	8-18, 8-29
WIRE_GATE_OUTPUT	8-30
SCALD	
ABBREV	4-52
BODY_TYPE	4-53
BUBBLE_GROUP	3-140
BUBBLED	3-141, 4-54
COMMENT_BODY	4-55
DEFINE	4-72
EXPR	4-56
HAS_FIXED_SIZE	4-57
NEEDS_NO_SIZE	4-51, 4-58
NOASSERT	4-59
NOWIDTH	4-53, 4-60
PART_NAME	4-62
PATH	4-63, 8-86
REP	4-64
SCOPE	4-65
SIZE	4-66, 8-3, 8-10
TERMINAL	4-67
TIMES	4-68, 8-3, 8-10, 8-12
TITLE	4-69
signal properties	4-14
Timing Verifier	
CHIP_DELAY	4-15, 6-13
CLOCK_DELAY	6-13
WIRE_DELAY	4-15, 4-41, 6-13
Property attributes	4-41
FILTER	4-47
INHERIT	4-44
PARAMETER	4-42
PERMIT	4-46
PROPERTY command	3-86, 4-36, 4-40
Property definition	4-35
PROPERTY_FILE directive	4-47
Puck	
see graphics tablet	
PULSE_FILTER directive	6-66
Pulse width	6-11

Q

QUIT command 3-87

R

RADIX command 7-33
 Radix value 4-21, 7-8
 REALCHIP_LIBRARY directive 7-42
 REATTACH command 3-88
 RECONVFANOUT directive 6-66
 REDISP command 7-33
 REDO command 3-89, 3-122
 REMOVE command 3-90, 7-33
 REP property 4-64
 REPLACE command 3-91
 REPLICATE body 11-102
 REPORT directive 5-28, 8-41
 REPORT_FILES directive 12-8
 RESUME command 7-34
 RETURN command 3-93
 RISE_FALL_ANAL directive 6-67
 RISE_FALL_MODELS directive 6-67
 Root drawing 5-4, 5-15
 ROOT_DRAWING directive 5-4, 5-29
 ROTATE command 3-94
 ROW command 7-13, 7-34

S

SAMPLE command 7-16, 7-18, 7-20, 7-34
 Scalar 4-9
 definition 4-9
 SCALD directories 3-121, 5-12
 directory types
 LOGIC 5-12
 SIM 5-13
 TIME 5-12
 SCALE command 3-95, 3-135
 SCOPE command 7-34
 SCOPE property 4-65
 SCRIPT command 3-96, 3-128, 7-34
 SECTION command 3-97, 3-130
 SESSION_LOG directive 7-42
 SET command 3-75, 3-98, 3-125, 7-16, 7-18,
 7-20, 7-35
 SET_MIN_DELAYS directive 6-67
 Setup mode 2-8
 command 2-8
 defaults 2-9, 2-10, 2-11
 menu 2-8

Index

SHOW command	3-102, 7-35
SIG_NAME property	3-123
SIGN_EXTEND body	11-102
Signal name syntax	4-10
bit subscript	4-12
changing syntax	4-16
constants	4-21
name string	4-11
radix values	4-21
signal class	4-11
signal class/name separator (\$)	4-11
Signal properties	
general properties	4-14
prefix character (\)	4-10
name properties	4-38
prefix character (!)	4-11
Signal synonyms	5-8
Signals	
concatenation character (:)	4-10, 4-21
scalar	4-9
unnamed	4-26, 4-30
value history	6-5, 6-9
vector	4-9
SIGNALS_PER_PAGE directive	6-86
SIGNAME command	3-104
SIM_DIRECTIVES body	11-102
SIM Library	11-113
SIMULATE command	7-15, 7-35, 7-39
Simulation models	7-67
Simulator	
see Logic Simulator	
SINGLE_DRAWING directive	5-30
SINGLE_NODE_NETS directive	8-41, 9-63
SIZE property	4-66, 8-3, 8-10
SLASH body	4-25, 11-102
SMASH command	3-105, 3-124
SNAPSHOT command	7-20, 7-35
Softkeys	3-48
softkeyassign file	3-48, 3-120
Special SCALD bodies	
A SIZE PAGE	11-101
B SIZE PAGE	11-101
DEFINE	11-101
DRAWING	3-123, 4-49, 11-101
FLAG	11-103
LSB TAP	11-102
MERGE	4-24, 11-29, 11-101
MSB TAP	11-102
NOT	4-25, 11-28, 11-101
ORIGIN	3-123, 11-26, 11-102
PIN NAMES	3-123, 11-103
REPLICATE	11-102

- Special SCALD bodies (con't)
- SIGN_EXTEND 11-102
 - SIM_DIRECTIVES 11-102
 - SLASH 4-25, 11-102
 - SYNONYM 4-5, 11-102
 - TAP 4-25
 - TIME_DIRECTIVES 11-102
 - VALID A SIZE PAGE 11-102
 - VALID B SIZE PAGE 11-102
 - SPLIT command 3-106
 - STANDARD Library 11-101
 - startup.ged 3-120, 3-121
 - State files 8-27
 - STEP command 7-36
 - STTL Library 11-61
 - Stuff list 10-5, 10-13
 - example 10-6, 10-13
 - SUPPRESS directive 5-31, 8-41, 9-64
 - SWAP command 3-107
 - SYNONYM body 4-5, 11-102
 - SYNONYM_FILE directive 7-43
- T
- TABULAR_TRACE directive 7-43
 - TAP body 4-25
 - TEGAS5 Library 11-119
 - TERMINAL command 7-36
 - TERMINAL directive 7-43
 - TERMINAL property 4-67
 - Terminal types 7-7
 - DEC VT100 2-5, 2-11, 2-13
 - escape sequence 2-12
 - ANSI 2-15
 - Valid extensions 2-17
 - VT52 2-22
 - IBM 3270 2-24
 - Text editors
 - Line Editor 3-53
 - vi 3-53
 - Text macro 4-70, 5-4
 - definition 4-70
 - predefined set 4-77
 - TEXT_MACRO_FILE directive 5-31
 - TIME Library 11-108
 - TIME_DIRECTIVES body 11-102
 - TIMES property 4-68, 8-3, 8-10, 8-12
 - Timing constraints 6-4
 - Timing diagram input files 6-85
 - Timing diagram output files 6-85
 - Timing diagrams
 - see PLOTTIME
 - Timing models 6-19

Index

Timing Verifier

case analysis	6-7, 6-71
case file	6-73
sample	6-74
syntax	6-73
delays	6-8
calculated	6-76, 6-77
component	6-8
default values	6-76
estimated	6-76, 6-79
wire	6-76
directives	
CLOCK_INTERVALS	6-60
CLOCK_PERIOD	6-60
CLOCK_SKEW	6-9, 6-61
DEFAULT_DRIVE	6-61
DELAY_ESTIMATOR	6-62
DOT_TYPE	6-62
LATCH_ERR_MODEL	6-62
LIST_BYNAME	6-63
LIST_CHIP	6-63
LIST_DOT	6-63
LIST_HISTOGRAM	6-63
LIST_NC	6-63
LIST_TRANINPUT	6-63
LIST_UNNAMED	6-63
LIST_VIOLATIONS	6-63
MAX_ERRORS	6-64
MAX_EVAL_PASSES	6-64
MAX_EXP_ERRORS	6-65
NC_SIGNALS	6-65
PREC_CLOCK_SKEW	6-9, 6-65
PRINT_WIDTH	6-65
PULSE_FILTER	6-66
RECONVFANOUT	6-66
RISE_FALL_ANAL	6-67
RISE_FALL_MODELS	6-67
SET_MIN_DELAYS	6-67
TIMING_DIAGRAMS	6-68
TS_BUS_TYPE	6-68
USE_DRAWING_WD	6-68
WIRE_DELAY	6-69
WIRE_ESTIMATE	6-69
evaluation directives	6-14, 6-17
glossary	6-89
primitives	6-19
complete list	6-19
properties	
CHIP_DELAY	4-15, 6-13
CLOCK_DELAY	6-13
WIRE_DELAY	4-15, 4-41, 6-13

Timing Verifier (con't)	
pulse width	6-11
sample run	6-49
signal strengths	6-34
signal value history	6-5, 6-9
timing diagrams	6-85
truth tables	
see Truth tables	
Timing violations	6-4
TIMING_DIAGRAMS directive	6-68
TITLE property	4-69
TRACE command	7-36
TRANSFER_LOG directive	12-8
Truth tables	
AND function	6-21
AND gate	6-6
BUF primitive	6-24
CHANGE function	6-21
IDENTIFY primitive	6-25
LATCH primitive	6-25
OR function	6-21
REG primitive	6-31
RES primitive	6-25
THRESHOLD primitive	6-24
TS_BUF primitive	6-22
TS_BUS primitive	6-22
XOR function	6-21
TS_BUF_TYPE directive	6-68
TS_BUS_TYPE directive	6-68
TTL Library	11-204
U	
UNDO command	3-108, 3-122
UNIX	
commands	
compile	5-35, 5-44
getcomp	5-46
getlink	5-47
restore	3-92, 3-125
rmcomp	5-49
rmlink	5-49
sepcomp	5-36, 5-44
seplink	5-36, 5-45
showcomp	5-47
showlink	5-48
simulate	7-4
update	3-126
vi	3-53

Index

UNIX (con't)

directories	12-17
programs	
cpfromvax	3-138
filecopy	12-3
gscald	10-8
help	2-30
maketemplate	2-5
plottime	6-87
setup	2-8
translate	11-7
walknet	12-13
UNKNOWN_LOADING property	8-18, 8-29
UPDATE command	3-109, 7-38
USE command	3-111, 3-122
USE_DRAWING_WD directive	6-68
USE_IF directive	7-43
USE_STATE_FILES directive	8-42

V

VALID A SIZE PAGE body	11-102
VALID B SIZE PAGE body	11-102
Valid Component Libraries	
see Libraries	
Valid Standard Signal Syntax	4-16
Vector	4-9, 7-12
VECTORIZE command	3-112
VERSION command	3-113
Vertex	3-26

W

Walknet program	12-13
WARNINGS directive	5-32, 8-42, 9-64
WAVEFORMS command	7-12, 7-38
WINDOW command	3-16, 3-114
Windows	
changing	2-27
creating	2-9, 2-26
deleting	2-28
menu	2-26
pass-through	2-28
setup parameters	2-9
WIRE command	3-116
WIRE_ESTIMATE directive	6-69
Wire-gate	8-11
WIRE_GATE property	8-30
WIRE_GATE_OUTPUT property	8-30
Wire-tie	8-11
WIRE_DELAY directive	6-69
WIRE_DELAY property	4-15, 4-41, 6-13