

I INDEX

Symbols

.DIRECTIVE (see Assembler directives)
? preprocessor operator [3-34](#)

Numerics

Assembler
command-line switch
-21 [2-21](#)

A

Address alignment [2-39](#)
Address of expression [2-31](#)
address_boundary_expression directive
[2-40](#)
ALIGN assembler directive [2-39](#)
Analog product information [1-2](#)
Archiver [2-16](#)
ASCII string initialization support [2-65](#)
Assembler
command-line switch [2-19](#)
-D (define macro) [2-21](#)
-g (generate debug information)
[2-21](#)
-h (-help) [2-21](#)
-i (include path) [2-22](#)
-l (listing file) [2-22](#)

-M (make rule only) [2-23](#)
-MM (make rule and assemble)
[2-24](#)
-Mo (output make rule) [2-24](#)
-Mt (make rule for named file) [2-23](#)
-o (output) [2-24](#)
-pp (proceed with preprocessing)
[2-25](#)
-r (remove preprocessor information)
[2-25](#)
-sp (skip preprocessing) [2-25](#)
-v (verbose) [2-25](#)
-version (display version) [2-26](#)
-w (skip warning messages) [2-26](#)
command-line syntax [2-16-??](#), [2-16](#),
[??-2-19](#)
comment conventions [2-36](#)
directives [??-2-66](#)
glossary [2-68](#)
how to use assembler [2-1](#)
keywords [2-27-2-29](#)
listing files (.LST) [2-5](#), [2-22](#)
numeric formats [2-35](#)
object files (.DOJ) [2-5](#)
operator precedence chart [2-32](#)
options [2-16](#)
overview [2-1](#)

- Project Options dialog box [2-16](#)
- reference section [2-16-??](#)
- reserved keywords [2-30](#)
- run-time environment [2-1](#)
- source files
 - (.ASM) [2-4](#), [2-18](#)
 - switches [2-19](#)
- Assembler interface (see Command-line syntax)
- Assembly
 - expressions [2-31](#)
 - instructions [2-6](#)
 - operators [2-32](#)
 - symbols in source code [2-30](#)
- Assembly directive [2-36-2-66](#)
 - . ALIGN [2-39](#)
 - . EXTERN [2-42](#)
 - . FILE [2-43](#)
 - . GLOBAL [2-44](#)
 - . LEFTMARGIN [2-45](#)
 - . LIST [2-46](#)
 - . LIST_DATFILE [2-47](#)
 - . LIST_DEFTAB [2-48](#)
 - . LIST_LOCTAB [2-49](#)
 - . LIST_WRAPDATA [2-50](#)
 - . NEWPAGE [2-51](#)
 - . NOLIST [2-46](#)
 - . NOLIST_DATFILE [2-47](#)
 - . NOLIST_WRAPDATA [2-50](#)
 - . PAGEDLENGTH [2-52](#)
 - . PAGESWIDTH [2-53](#)
 - . PORT [2-54](#)
 - . PRECISION [2-55](#)
 - . PREVIOUS [2-56](#)

- . ROUND [2-57](#)
- . SECTION [2-59](#)
- . SEGMENT/. ENDSEG [2-61](#)
- . TYPE [2-62](#)
- . VAR [2-63](#)
- . WEAK [2-67](#)
- format [2-6](#)

C

- C/C++ and assembly, interfacing [2-10](#)
- Changing default symbol type [2-62](#)
- Character constant [3-17](#), [3-25](#)
- Commands (see Preprocessor commands)
- Comment conventions [2-36](#)
- Concatenate (##) preprocessor command [3-33](#)
- Constant expression [2-31](#)
- Contents
 - assembly program [2-6](#)
- Conventions
 - address expressions [2-31](#)
 - assembly directives [2-36](#)
 - comments [2-36](#)
 - constant expressions [2-31](#)
 - file naming [2-17](#)
 - numeric formats [2-35](#)
- cs! ("!" comment style) preprocessor switch [3-12](#)
- cs/* ("/* */" comment style) preprocessor switch [3-12](#)
- cs// ("//" comment style) preprocessor switch [3-12](#)

- cs{ ("{}" comment style) preprocessor switch [3-12](#)
 - csall (all comment styles) preprocessor switch [3-12](#)
 - Customer support [1-2](#)
- D**
- D (define macro) assembler switch [2-21](#)
 - D (define macro) preprocessor switch [3-12](#)
 - Declaring variables or buffers [2-63](#)
 - Default tab width [2-48](#), [2-49](#)
 - define (macro or constant) preprocessor command [3-19](#)
 - DM (data), section and memory type [2-59](#)
- E**
- easm21k assembler [2-16](#)
 - else (alternate instruction) preprocessor command [3-22](#)
 - endif (termination) preprocessor command [3-23](#)
 - error (error message) preprocessor command [3-24](#)
 - Expressions
 - address [2-31](#)
 - constant [2-31](#)
 - EXTERN (global label) assembler directive [2-42](#)
- F**
- FILE (override filename) assembler directive [2-43](#)
 - File extension
 - .ASM (assembly source file) [2-16](#)
 - .DAT (data file) [2-16](#)
 - .DLB (library file) [2-16](#)
 - .DOJ (object file) [2-5](#), [2-16](#)
 - .DXE (executable file) [2-16](#)
 - .H (header file) [2-16](#)
 - .I (preprocessed file) [3-9](#)
 - .IS (preprocessed file) [2-25](#), [3-1](#), [3-9](#)
 - .LST (listing file) [2-5](#)
 - File format
 - DWARF-2 (Debugging Information Format) [2-16](#)
 - ELF (Executable and Linkable Format) [2-16](#)
 - File naming conventions [2-17](#)
 - Floating-point
 - precision [2-55](#)
 - rounding [2-57](#)
- G**
- g (generate debug information) assembler switch [2-21](#)
 - Generating unique labels [3-34](#)
 - GLOBAL (global symbol) assembler directive [2-44](#)
- H**
- h (help) assembler switch [3-13](#)
 - Header files [3-4](#)
 - system [3-4](#)

user 3-4
-help (display help) assembler switch
2-21

I

-i (include path) assembler switch 2-22
-i (include path) preprocessor switch
3-13
-I directory assembler switch 2-22
if (test if true) preprocessor command
3-25
ifdef (test if defined) preprocessor
command 3-26
ifndef (test if not defined) preprocessor
command 3-27
include (insert a file) preprocessor
command 3-28
Included files
system header files 3-4
user header files 3-4
Input section alignment instruction
2-40
INPUT_SECTION_ALIGN() linker
instruction 2-40
Inserting a page break 2-51
Instruction set 2-6, 2-68
Interfacing, C/C++ and assembly 2-10

L

-l (listing file) assembler switch 2-22
LDF operator
INPUT_SECTION_ALIGN() 2-40
LEFTMARGIN assembler directive
2-45

line (output line number) preprocessor
command 3-29

Linker 2-16

Input section alignment instruction
2-40

Linker Description File 2-8, 2-68

LIST assembler directive 2-46

LIST_DATFILE assembler directive
2-47

LIST_LOCTAB assembler directive
2-49

LIST_WRAPDATA assembler directive
2-50

Listing

data initialization files 2-47

large opcodes 2-50

Listing file 2-3, 2-12-??

address 2-12

line number 2-12

opcode 2-12

source code line 2-12

Local tab width 2-48, 2-49

M

-M (make rule only)

preprocessor switch 3-13

-M (make rule only) assembler switch
2-23

Macros

compound statements 3-6

overview 3-5

Macros, predefined 3-7

Manual

conventions 1-6

- new in this edition [1-4](#)
- related documents [1-5](#)
- Memory sections [2-59](#)
- Memory type [2-7](#)
 - DM (data) [2-59](#)
 - PM (code and data) [2-59](#)
 - RAM (random access memory) [2-59](#)
 - ROM (read only memory) [2-59](#)
- MM (make rule and assemble)
 - preprocessor switch [3-14](#)
- MM (make rule and assemble)
 - assembler switch [2-23](#)
- Mo (output make rule)
 - preprocessor switch [3-15](#)
- Mo (output make rule) assembler
 - switch [2-24](#)
- Mt (output make rule for named file)
 - preprocessor switch [3-15](#)
- Mt assembler switch [2-24](#)

N

- Nested include file limitation [3-28](#)
- NEWPAGE assembler directive [2-51](#)
- NOLIST assembler directive [2-46](#)
- NOLIST_WRAPDATA assembler
 - directive [2-50](#)
- Notation conventions of this manual
 - [1-6](#)
- Numeric formats [2-35](#)

O

- o (output) assembler switch [2-24](#)
- o (output) preprocessor switch [3-15](#)
- Object file [2-3](#)

P

- p (proceed with preprocessing only)
 - assembler switch [2-25](#)
- PAGELength (page size) assembler
 - directive [2-52](#)
- PAGEWIDTH (page width) assembler
 - directive [2-53](#)
- PM, section and memory type [2-59](#)
- PORT (declare port) assembler legacy
 - directive [2-54](#)
- pp (proceed with preprocessing)
 - assembler switch [2-25](#)
- PRECISION assembler directive [2-55](#)
- Preprocessor
 - command format [2-7](#)
 - command list [3-17](#)
 - command-line switch
 - cs! [3-12](#)
 - cs! ("!" comment style) [3-12](#)
 - cs/* [3-12](#)
 - cs/* ("/* */" comment style) [3-12](#)
 - cs// [3-12](#)
 - cs// ("//" comment style) [3-12](#)
 - cs{ [3-12](#)
 - cs{ ("{}" comment style) [3-12](#)
 - csall [3-12](#)
 - csall (all comment styles) [3-12](#)
 - D (define macro) [3-12](#)
 - h (help) [3-13](#)
 - i (include path) [3-13](#)
 - M (make rule only) [3-13](#)
 - MM (make rule and assemble)
 - [3-14](#)
 - Mo (output make rule) [3-15](#)

- Mt (output make rule for named file) 3-15
- o (output) 3-15
- v (verbose) 3-15
- version (display version) 3-15
- directive syntax 3-16
- directives 3-16
- how to use 3-3
- macro definitions 3-6
- overview 3-1
- preprocessed assembly files 3-1, 3-9
- reference section 3-9–3-33
- Preprocessor command
 - # (string) 3-32
 - ## (concatenate) 3-33
 - #define 3-19
 - #elif 3-21
 - #else 3-22
 - #endif 3-23
 - #error 3-24
 - #if 3-25
 - #ifdef 3-26
 - #ifndef 3-27
 - #include 3-28
 - #line 3-29
 - #undef 3-30
 - #warning 3-31
 - ? (generate unique label) 3-34
- Preprocessor switch (see Preprocessor command-line switch)
- PREVIOUS assembler directive 2-56
- Program 2-6
 - assembling 2-4
 - contents 2-6–2-7

- interfacing requirements 2-10
- preprocessing 2-11
- reading a listing file 2-12–??
- structure 2-7–2-10
- writing an assembly programs 2-3–2-5
- Project Options dialog box 2-15, 3-3

R

- r (remove preprocessor info) assembler switch 2-25
- r (remove preprocessor output) assembler switch 2-25
- RAM, section and memory type 2-59
- Related documents 1-5
- ROM, section and memory type 2-59
- ROUND (rounding mode) assembler directive 2-57
- Rounding modes 2-57

S

- SECTION assembler directive 2-59
- Section qualifier
 - DM (data memory) 2-59
 - PM (code and data) 2-59
 - RAM (random access memory) 2-59
 - ROM (read only memory) 2-59
- sectionType parameter 2-60
- SEGMENT (legacy directive) assembler directive 2-61
- Setting
 - default tab width 2-48
 - local tab width 2-49
- Setting assembler options 2-14

- from command line [2-14](#), [2-19](#)
- from VisualDSP++ IDDE [2-1](#), [2-15](#)
- Setting preprocessor options
 - from command line [3-3](#)
 - from VisualDSP++ IDDE [3-3](#)
 - through build tools [3-3](#)
- SHARC processors [1-1](#)
- sp (skip preprocessing) assembler switch [2-25](#)
- sp (skip preprocessing) assembler switch [2-25](#)
- String (#) preprocessor command [3-32](#)
- Switches (see Assembler command line syntax)
- Symbols (see Assembly symbols)
- Syntax
 - address expressions [2-31](#)
 - assembly directives [2-36](#)
 - compound statement [3-6](#)
 - constant expressions [2-31](#)
 - instruction set [2-6](#)
 - macro [3-5](#)
 - preprocessor command-line [3-9](#)
 - preprocessor directive [3-16](#)
- System header files [3-4](#)

T

- Tab characters [2-48](#)
 - in source file [2-49](#)
- Table 2-7. Numeric Formats [2-35](#)
- Technical support [1-2](#)
- TYPE assembler directive [2-62](#)

U

- undef (undefine) preprocessor command [3-30](#)
- unique labels [3-34](#)
- User header files [3-4](#)

V

- v (verbose) assembler switch [2-25](#)
- v (verbose) preprocessor switch [3-15](#)
- VAR (declare variable) assembler directive [2-63](#)
- verbose assembler switch [2-25](#)
- version (display version) assembler switch [2-26](#)
- version (display version) preprocessor switch [3-15](#)
- VisualDSP++
 - setting assembler options [2-1](#)
 - setting preprocessor options [3-3](#)

W

- w (disable all warnings) assembler switch [2-26](#)
- w (skip warning messages) assembler switch [2-26](#)
- warning (warning message)
 - preprocessor command [3-31](#)
- WEAK
 - assembler directive [2-67](#)
 - binding [2-67](#)
- Wrapping opcode listings [2-50](#)
- Writing assembly programs [2-3](#)

