gputils 0.12.1

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Introduction

gputils is a collection of tools for Microchip (TM) PIC microcontrollers. It includes gpal, gpasm, gplink, and gplib. Each tool is intended to be an open source replacement for a corresponding Microchip (TM) tool. This manual covers the basics of running the tools. For more details on a microcontroller, consult the manual for the specific PICmicro product that you are using.

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gpal

2.1 Introduction

gpal is a compiler for Microchip

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a PIC executable or gplib to produce an

CHAPTER 2. GPAL 9

2.5.2 Numbers

gpal uses decimal as its default radix. The following table

summarizes other supported nume

base general syntax 21 decimal written as

CHAPTER 2. GPAL 10

2.6 Statements

2.6.1 If

```
if <expression> then
    <statements>
[elsif <expression> then
    <statements>]*
[else
    <statements>]?
end if;
```

The statements in each block are executed if the expression is true. Here is an example:

```
if i < 10 then
    j = 5;
elsif</pre>
```

3.1.1 Using gpasm with "make"

On most operating systems, you can build a project using the make utility.

base	general syntax	21 decimal written as

3.2.5 Processor header files

gputils distrib

MACRO

```
<label> MACRO [ <symbol> [ , <symbol> ]* ]
```

Declares a macro with name <label>. gpasm replaces any occurrences of <symbol> in the macro definition with the parameters given at macro invocation.

See also: LOCAL, ENDM

MESSG

```
MESSG <string>
```

Writes <string> to the list file, and to the standard error output.

See also: ERROR

NOEXPAND

NOEXPAND

Turn off macro expansion in the list file.

See also: EXPAND

NOLIST

NOLIST

Disables list file output.

See also: LIST

ORG

```
ORG <expression>
```

Sets the location at which instructions will be placed. If the source file does not specify an address with ORG, gpasm assumes an ORG of zero.

PAGE

PAGE

Causes the list file to advance to the next paRe.

See also: LIST

PAGESEL

```
PAGESEL <label>
GOTO <label>
```

thabelEcgiaReselectingselecti(e)Tj 6.83391 0 Td

This directive will generate paReselecting code to set the paRe bits to the paRe containing<label>

PROCESSOR

PROCESSOR <symbol>

Selects the target processor. See section ?? for more details.

See also: LIST

RADIX

RADIX <symbol>

Selects the default radix from "oct" for octal, "dec" "dec"

UDATA ACS

```
<label> UDATA_ACS <expression>
```

Only for relocatable mode. Creates a new uninitialized accessbank data secaion in the output objeca file. klabel specifies the name of the secaion. If klabel is not specified the default name ".udata_acs" will be used. klabel specifies the absolute address of the secaion.

See also: CODE, IDATA, UDATA

UDATA_OVR

```
<label> UDATA OVR <expression>
```

Only for relocatable mode. Creates a new uninitialized overlaid data secaion in the output objeca file. <a h

See also: CODE, IDATA, UDATA

UDATA_SHR

```
<label> UDATA_SHR <expression>
```

Only for relocatable mode. Creates a new uninitialized sharebank data secaion in the output objeca file. tel:abel specifies the name of the secaion. If tel:abel is not specified the default name ".udata_shr" will be used. tel:abel is opaional and specifies the absolute address of the secaion.

See also: CODE, IDATA, UDATA

VARIABLE

```
VARIABLE <label>[=<expression>, <label>[=<expression>]]*
```

Delcares variable with the name <label>. The value of <label> may later be reassigned. The value of <label> does not have to be assigned at declaraaion.

See also: CONSTANT

WHILE

WHILE <expression>

Performs loop while <expression> is true.

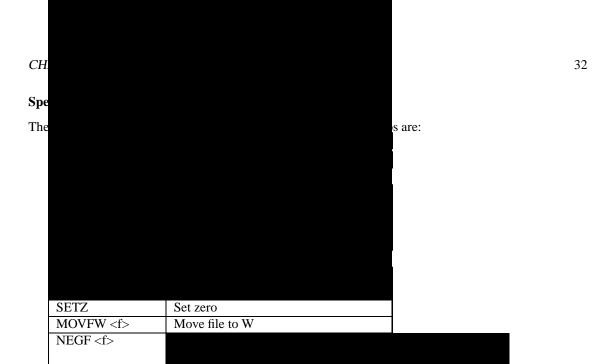
See also: ENDW

3.4 Instrucaions

3.4.1 Instruction set summary

12 bit Devices (PIC12C5XX)

Syntax	Description
ADDWF <f>,<dst></dst></f>	Add W



onomerro

115 Duplicate Label

Duplicate label or redefining a symbol that can not be redefined.

124 Illegal Argument

gpasm encountered an illegal argument in an expression.

125 Illegal Condition

An illegal condition like a missing ENDIF or ENDW has been encountered.

126 Argument out of

3.5.2 Warnings

201

The ID locations value specified is too large.

305 Using default destination of

CHAPTER 4. GPLINK 37

If the user does not specify a linker script, gplink will

gplib

gplib creates, modifies and extracts COFF archi

CHAPTER 5. GPLIB 39

Utilities

6.1 gpdasm

gpdasm is a disassembler for gputils. It converts hex files generated by gpasm and gplink into disassembled instructions.

6.1.1 Running gpdasm

The general syntax for running gpdasm is

gpdasm [options] hex-file

Where options can be one of:

Option	Meaning
h	Display the help message.
i	Display hex file information
1	List supported processors.
m	Memory dump hex file.
p <pre>processor></pre>	Select processor
S	

6.2 gpvc

gpvc is cod file viewer for gputils. It provides an easy way to view the contents of the cod files generated by gpasm and gplink.

6.2.1 Running gpvc

The general syntax for running gpvc is

gpvc [options] cod-file

Where options can be one of:

<u> </u>	3 /	
Option	Mea	ıning

a	Display all information
d	Display directory header
S	Display symbols
h	Show the help message.
r	Display ROM
1	Display source listing
m	Display debug message area
v	Print gpvc version information and exit.

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