

THE INDEX OF

Propeller Software

By Jeff Ledger
December 2008 *Unfinished* Release

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INTRODUCTION:

This guide is intended as both a reference for various software projects which have been posted on the Propeller/Hydra forums. The forums (<http://forums.parallax.com>) are an incredible resource. On a daily basis friendly Parallax enthusiasts from all over the world interact, posting new projects, asking questions, helping others, and in general socializing about various items of interest. The constant activity is a two edged sword. On average, over a hundred postings are made everyday, providing new inspiration and constant excitement, but the downside being that interesting items are quickly buried, and new members can easily miss some of the great projects which have been posted in the last couple years. The forums can become a “black hole” to which projects disappear easily, only found by those who are persistent enough to dig them out.

This document focuses primarily on Propeller software projects. These include various games and program which take the approach of using a Propeller like a minicomputer. Much of the gaming work started with the Hydra gaming system. Conversion instructions for using these programs with Protoboard / Demoboard / SpinStudio configurations are listed. This document will assume that you are using the following configuration:

Nintendo (NES) Controllers	P3,P4,P5,P6
Composite Video (TV)	P12,P13,P14
Audio Right/Left	P10,P11
PS2 Keyboard	P26,P27
PS2 Mouse	P24,P25
SD/MMC	P16,P17,P18,P19

Almost any I/O pin can be used for any configuration you choose, but since I’m the author of this text we’ll use mine here. In games where the choice is mouse or NES controller, I've given preference to the game controller.

Propeller configuration is another of those “two-edged sword” issues. While not having a standard configuration is a positive aspect to Propeller development, at the same time it has created a lot regular questions on how to reconfigure pin settings from one configuration to another. Many software solutions has been debated in the forums on a method of solving this problem, but like most debates, it hasn’t gone much further than multiple cups of coffee and hearty discussion.

Without further ado, I present The Software Index for the Propeller.



3D MONSTER MAZE

By: Jim Bagley

Remake of the ZX81 game
by the same name.

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=242839>

While Jim did not release the source code for this game he released working binaries for several Propeller platforms. Program works with both NES and keyboard controls.

http://www.propgfx.co.uk/Baggers/Games/3D_MM_Hybrid.binary

http://www.propgfx.co.uk/Baggers/Games/3D_MM_ProtoDemo.binary

http://www.propgfx.co.uk/Baggers/Games/3D_MM_Hydra.binary

Here is link to a version which works for our configuration:

http://www.propgfx.co.uk/Baggers/Games/3D_MM_ProtoNESPAD.binary



ALIEN INVADER By: Remi Veilleux

A vertically scrolling shoot 'em up

Published Location:

Game Programming for the Propeller-Powered Hydra

<http://www.parallax.com/Store/Books/Propeller/tabid/171/CategoryID/20/List/0/SortField/0/Level/a/ProductID/474/Default.aspx>

In “REM_AlienInvader_013.spin”

Change lines 21 and 22 to read:

```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

Change line line 149 to read: (Turn keyboard driver off)

```
key.start(0)
```

Change line 329 to:

```
long    %001_0101    'pins
```

You can activate the keyboard by downloading 'combokeyboard.spin' from <http://obex.parallax.com> and changing the following two lines:

Change line line 149 to read:

```
key.start(26)
```

Change line 114 to:

```
key    : "Combokeyboard.spin"
```



BALL BUSTER
By: JT Cook

Remake of popular 'breakout' games

Published Location:

Game Programming for the Propeller-Powered Hydra

<http://www.parallax.com/Store/Books/Propeller/tabid/171/CategoryID/20/List/0/SortField/0/Level/a/ProductID/474/Default.aspx>

In “**JTC_B_Buster_005.spin**”

Change lines 26 and 27 to read:

```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

Change line 143 to read:

```
snd.start(10)
```

Change line line 156 to read: (Turn mouse driver off)

```
mouse.start(0)
```

In “**cop_drv_010x.spin**”

Change line 815 to read:

```
tvport_mask          long          %0000_0111<<12
```

Change lines 896, 898 and 899 to read:

```
movs    vcfg, #%1110_0000  
  
movd    vcfg, #1  
movi    vcfg, #%0_11_101_000
```



BATTLEZ0WNED
By: Michael Park

Remake of the classic arcade game
by the same name.

Supports Networked Play

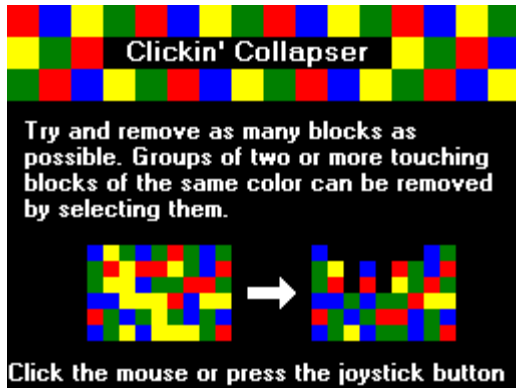
Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=221357>

Michael developed this game for head-to-head combat between two Hydra gaming systems. The Hydra-Net interface is easy to create for other platforms and is documented in the Propeller Cookbook. You can run the game in single player, moving around and shooting the other tank.

Here is link to a version which works for our configuration:

<http://forums.parallax.com/forums/default.aspx?f=33&m=221357&g=313432#m313432>



CLICKIN' COLLAPSER
By: Spork Frog

Remake of Clickomania.

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=260470>

The object of the game is to remove as many tiles as possible. Groups of 2 or more adjacent same-colored tiles can be removed, and any tiles above the group will fall down to fill in the spaces that are made, as well as sliding to the left when entire columns are gone. Control is with the gamepad or mouse (mouse only on Demoboard setups.) Use the D-pad to select a tile (group) and press A to remove it, or mouse movement and right or left click when using the mouse.

Here is link to a version which works for our configuration:

<http://forums.parallax.com/forums/default.aspx?f=33&m=260470&g=313462#m313462>



DEFENDER

By: Steve Waddicor

Sound by: Eric Moyer

Remake of classic arcade game
by the same name

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=25&m=238821>

The version of Defender posted above works well for Protoboard / Demoboard setups where the keyboard is the control. To achieve keyboard control, the sound had to be sacrificed.

If you are using the configuration listed in this text, make the following adjustments to the spin source and enjoy both sound and NES controls at the same time.

In “**sw_defender_007.spin**”

Change line 66 to read:

```
USE_KEYBOARD          = 0
```

In “**EPM_Defender_Sound_Engine2_005.spin**”

Change line 26 to read:

```
PIN_AUDIO             = %00000000_00000000_00000100_00000000
```

Change line 465 to read:

```
CTRAVAL               long    %00110 << 26 + 10
```

In “**EPM_Defender_Sound_Engine2_030.spin**”

Change line 52 to read:

```
PIN_AUDIO             = %00000000_00000000_00000100_00000000
```

Change line 1100 to read:

```
CTRAVAL               long    %00110 << 26 + 10
```




DODGY KONG

By: Steve Waddicor

Sound by: Eric Moyer

Remake of the classic arcade game
Donkey Kong

Published Location: (Download [version 21](#))

<http://forums.parallax.com/forums/default.aspx?f=33&m=193209>

There are several adjustments to make this work with our configuration.

In “**sw_dkong_21.spin**”

Change lines 27 and 28 to read:

```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

In “**sw_dk_tv_drv_022.spin**”

Change lines 141, 142, and 144 to read:

```
movs   VCFG, #0111_0000  
movd   VCFG, #1  
movi   VCFG, #0_11_111_000
```

Change line 289 to read:

```
tvport_mask          long    %0000_0111<<12
```

The required audio driver “**NS_sound_drv_052_22khz_16bit.spin**” is licensed with the Hydra Book. You’ll need to either copy it from the “Sources” folder of the CD, or download a silent version from:

<http://forums.parallax.com/forums/default.aspx?f=33&m=313480>

In “**EPM_HDMF_Lite_custom_DK_driver_014.spin**”

Change line 306 to read:

```
snd.start(10)
```



DR HYDRA

By: Remi Veilleux

A clone of a popular NES puzzle game

Published Location:

Game Programming for the Propeller-Powered Hydra

<http://www.parallax.com/Store/Books/Propeller/tabid/171/CategoryID/20/List/0/SortField/0/Level/a/ProductID/474/Default.aspx>

In “REM_dr_hydra_018.spin”

Change lines 16 and 17 to read:

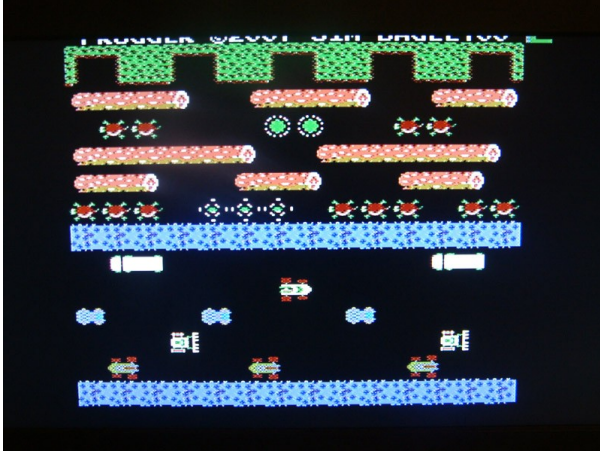
```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

Change line line 179 to read: (Turn keyboard driver off)

```
key.start(0)
```

Change line 279 to:

```
long    %001_0101    'pins
```



FROGGER

By: Jim Bagley

Remake of the classic arcade game
by the same name

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=236063>

While Jim did not release the source code for this game he released working binaries for several Propeller platforms. Program works with both NES and keyboard controls.

http://www.progfix.co.uk/Baggers/Games/Hybrid_Frogger.binary

http://www.progfix.co.uk/Baggers/Games/Hydra_Frogger.binary

Here is link to a version which works for our configuration:

http://www.progfix.co.uk/Baggers/Games/ProtoDemo_Frogger.binary



GRIDRUNNER
By: Barnse

Remake of the Commodore game
by the same name

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=274708>

Download the files, **BAM_GridRunner_16.spin**,
BAM_GridRunner_Graphic_DRV_06.spin, & **comboKeyboard.spin**.
from the thread.

You'll also need "NS_sound_drv_052_22khz_16bit.spin" from the "Sources"
folder of the Hydra CD, or download the silent version:

<http://forums.parallax.com/forums/default.aspx?f=33&m=313480>

Make the following adjustments to get the video working correctly.

In "**BAM_GridRunner_Graphic_DRV_06.spin**"

Change line 341 to:

```
VCFG, #%0_11_001_000
```

Change line 378 to:

```
VCFG, #%0_11_111_000
```



HYDRIS
By:Rainer Blessing

Remake of the classic game Tetris

Published Location:

<http://obex.parallax.com/objects/102/>

This is part of the Hydra Code Teaser, a sample of code from the HYDRA Game Development Kit released by the author. The Hydra book is highly recommended for anyone learning spin and those with a desire to program games.

Make the following adjustments:

In “**RB Hydris 012.spin**”

Change lines 29 and 30 to:

```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

Change line 115 to:

```
key.start(26)
```

Change line 118 to:

```
snd.start(10)
```

Change line 610 to:

```
long    %001_0101    'pins
```

At this point, the NES controller should work perfectly. The keyboard driver is not compatible, but I've had trouble switching in **Combokeyboard.spin** without the program stopping. Contact me if you have new information on this.



JETPAC

By: Jim Bagley

Remake of the Spectrum game
by the same name

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=25&m=217955>

Jim's pre-compiled binary "JetPacProtoDemo.binary" works,
but lacks the correct settings for sounds. Download the [Source](#)
(<http://www.jimbagley.co.uk/JetPacSource.zip>) version and make the following changes:

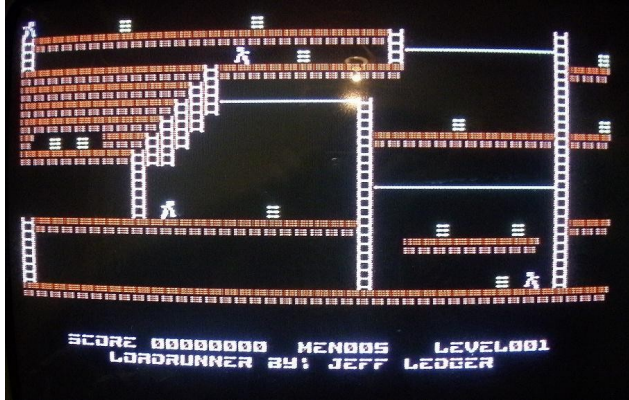
Make the following adjustments to get the sound working correctly.

In "ym2413a_hss_v1.spin"

Change lines 648-651 to the following:

```
Port_Pins      long      %00000000_00000000_00001100_00000000
                ' - CTR  PLL  ----- BPIN  --- APIN
Right_ctra     long      %0_00110_000_00000000_000000_000_001010
Left_ctra      long      %0_00110_000_00000000_000000_000_001011
```

The correct lines are actually remarked just above in lines 643-646.



LOADRUNNER
By: Jeff Ledger

Remake of the classic 8bit game
Loderunner

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&p=1&m=274004>

Game requires SD card. Copy all the level*.txt files to the SD card.

Make the following adjustments to setup for Demoboard/Protoboard speed:

In “**loadrunner.spin**”

Change line 35 to:

```
_xinfreq = 5_000_000
```



LOCK-N-CHASE
By: Remi Veilleux

Remake of the classic game by
by the same name

Published Location:

Game Programming for the Propeller-Powered Hydra

<http://www.parallax.com/Store/Books/Propeller/tabid/171/CategoryID/20/List/0/SortField/0/Level/a/ProductID/474/Default.aspx>

In “**REM_LockNChase_020.spin**”

Change lines 13 and 14 to read:

```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

Change line 130 to read: (Turn off keyboard driver)

```
key.start(0)
```

Change line 133 to read:

```
snd.start(10)
```

Change line line 201 to read:

```
long    %001_0101    'pins
```




MANIC MINER
By: Jim Bagley

Remake of the classic Spectrum game
by the same name.

Published Location: (Download: <http://www.jimbagley.co.uk/ManicMiner002.zip>)
<http://forums.parallax.com/forums/default.aspx?f=33&p=1&m=190041>

Start by copying all of the files in the \level folder to the root of your SD card.

Make the following adjustments:

In “**JB_ManicMiner_002.spin**”

Remove the both ' in the Hydra Defines area and remove the { and } from the “*Proto/Demoboard Defines - SD card installed on pin 0-3*” to activate the correct settings. Activated section should appear as below:

```
'Proto/Demoboard Defines - SD card installed on pin 0-3
  _CLKMODE           = xtall + pll16x
  _XINFREQ           = 5_000_000 + 0000

USE_SDCARD_INSTEAD_OF_HIEEPROM = 1
USE_SOUND_BITS_FOR_STEREO     = 3
USE_SOUND_PINS                 = 10
USE_HYDRA_KEYBAORD            = 0
USE_TV_ON_PIN_24              = 0
```

Change line 176 to:
sdfat.mount (16)



MARS LANDER
By: Andre' LaMothe

Remake of classic moon lander game.

Published Location:

<http://obex.parallax.com/objects/102/>

This is part of the Hydra Code Teaser, a sample of code from the HYDRA Game Development Kit released by the author. The Hydra book is highly recommended for anyone learning spin and those with a desire to program games.

Make the following adjustments:

In “**mars lander 011.spin**”

Change lines 24 and 25 to:

```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

Change line 737 to:

```
long    %001_0101    'pins
```



MERCURY MISSION

By: Barnse

Remake of Jupiter Lander, different planet.

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=219250>

Download all of the files from the top thread.

You will need “NS_sound_drv_052_22khz_16bit.spin” from the “Sources” folder of the Hydra CD, or download the silent version:

<http://forums.parallax.com/forums/default.aspx?f=33&m=313480>

You'll also need to download a dummy version of “NS_eeprom_drv_010.spin”

<http://forums.parallax.com/forums/default.aspx?f=33&m=219250&g=313699#m313699>

Make the following adjustments to get the video working correctly.

In “**BAM Mercury Mission 011.spin**“

Change lines 20 and 21 to:

```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

Change line 978 to:

```
long    %001_0101
```

In “**EPM_HDMF_driver_011.spin**“

Change line 163 to:

```
snd.start(10)
```



PLANETARY DEFENSE

By: Michael Park

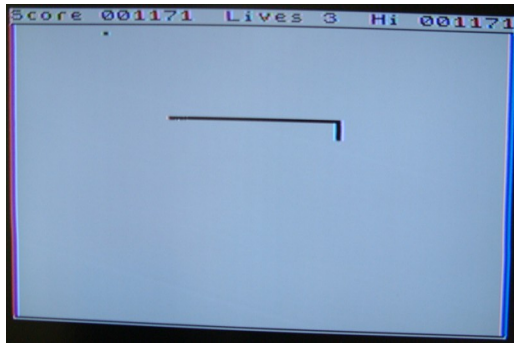
Remake of the classic Atari game
Planetary Defense

Original game by: Tom Hudson
ANALOG COMPUTING NO. 17
MARCH 1984

Published Location: (Download: <http://forums.parallax.com/forums/default.aspx?f=33&m=212449&g=313898#m313898>)
<http://forums.parallax.com/forums/default.aspx?f=33&p=1&m=212449>

The version I posted at the 'Download' location is configured correctly for our listed setup. It includes a silent version of the sound driver.

For full sound, replace the file: **NS_sound_drv_052_11khz_16bit.spin** with a licensed copy from the \sources folder of the Hydra CD which is sold with the book, Game Programming for the Propeller Powered Hydra.



Snakes

By: Jim Bagley

Remake of classic 'snake' game

Published Location:

<http://forums.parallax.com/forums/?f=25&m=219606&g=219606#m219606>

Several binaries were released for various Propeller/Hydra configurations. The following binary works perfectly for our setup using a keyboard.

<http://forums.parallax.com/forums/attach.aspx?a=17227>

The source for the game can be downloaded here:

<http://forums.parallax.com/forums/attach.aspx?a=17451>



SPACE WAR
By: Eric Moyer

Remake of the classic game
by the same name

Published Location: (Download: <http://forums.parallax.com/forums/attach.aspx?a=14088>)
<http://forums.parallax.com/forums/default.aspx?f=33&p=1&m=187691>

Version 2.5 of Spacewar requires the use of 'Hydra Asset Manager' (HAM) to load all the game effects into EEPROM. Version 1.8 from the 'Download' link above will allow you to play the game in silent mode with a few easy adjustments.

You will need “**NS_sound_drv_052_22khz_16bit.spin**” from the “Sources” folder of the Hydra CD, or download the silent version:
<http://forums.parallax.com/forums/default.aspx?f=33&m=313480>

Make the following adjustments:

In “**EPM_Spacewar_018.spin**“

Change lines 128 and 129 to:

```
_clkmode = xtall1 + pll116x  
_xinfreq = 5_000_000_
```

Change line 406 to:

```
key.start(26)
```

Change line 409 to:

```
snd.start(10)
```



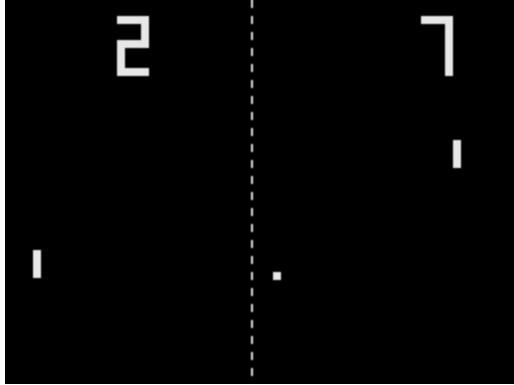
SPACIES
By: Jim Bagley

A clone of the classic game, Space Invaders

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=25&m=185884>

Game is already configured perfectly, just download and play.



SPINPONG
By: JT Cook

Remake of the classic game, PONG

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=25620>

Unremark the Demo/Proto board setup so that the active section appears as below.

```
' Demo/Proto board stup
_clkmode = xtall + pll16x
_xinfreq = 5_000_000
_memstart = $10
Video_Pins = %001_0101  ''pin location for video out
V_NP = NTSC ''video type - NTSC
Console = 0
Audio_Pins = %00000000_00000000_00001100_00000000
             '- CTR  PLL ----- BPIN  --- APIN
Audio_Ctra = %0_00110_000_00000000_000000_000_001010

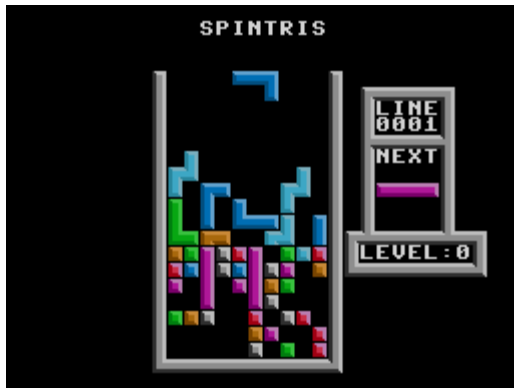
Audio_Pin=10 ''for freq gen

Mouse_Data_Line=24
Mouse_Clk_Line=25
Keyboard_Data_Line=26
Keyboard_Clk_Line=27
```

If you use the 'two mouse' option, you'll also want to adjust lines 146-155 so that they appear as below. (Changing the mouse driver)

```
{ ''Mouse driver for Hydra, setup different since each port has 4 lines
  mouse_left : "mouse_hydra.spin"      ' instantiate a mouse object
  mouse_right : "mouse_hydra.spin"     ' instantiate a mouse object
}

''Standard mouse driver
mouse_left : "mouse.spin"              ' instantiate a mouse object
mouse_right : "mouse.spin"             ' instantiate a mouse object
```

SPINTRIS
By: JT Cook

Remake of the classic game, Tetris

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=228502>

In “spintris.spin”

Remove the both ' in the Hydra setup area and remove the { and } from the “*Demo/Proto board setup*” to activate the correct settings.

The activated section should appear as below:

```
' Demo/Proto board setup
_clkmode = xtall + pll16x
_xinfreq = 5_000_000
_memstart = $10
Key_Pins = 26    ''pin location for keyboard
Video_Pins = %001_0101    ''pin location for video out
V_NP = NTSC    ''video type - NTSC
Console = 0
Audio_Pins = %00000000_00000000_00001100_00000000
             '- CTR  PLL ----- BPIN  --- APIN
Audio_Ctra = %0_00110_000_00000000_000000_000_001010
```



UNTERWELT
By: Michael Zinn

An original game for the Propeller.

Published Location:

<http://forums.parallax.com/forums/default.aspx?f=33&m=237537>

This game uses the graphics driver, **HEL_GFX_ENGINE_040** from the Hydra Kit, so you'll want to download the '*NOSOUND.binary*' on the top thread. Simply upload the file to the Propeller to play.



X-RACER
By: JT Cook

A classic racing game in the style of Pole Position

Published Location:

Game Programming for the Propeller-Powered Hydra

<http://www.parallax.com/Store/Books/Propeller/tabid/171/CategoryID/20/List/0/SortField/0/Level/a/ProductID/474/Default.aspx>

In “**JTC_Xracer_010.spin**”

Change lines 42 and 43 to read:

```
_clkmode = xtall + pll16x  
_xinfreq = 5_000_000
```

Change line 224 to read:

```
snd.start(10)
```

Change line line 1103 to read:

```
long    %001_0101    'pins
```