

DMD Extender

Configuration Utility

V0.5 April 2013

Introduction

The DMD Extender Configuration Utility is a Windows application designed to make configuring the Extender software as easy as possible.

Each version of the DMD Extender software comes with its own version of the Configuration Utility except v0.4 – in the case of this version of software it is recommended to upgrade to the latest version and use the Configuration Utility to reset your configuration.

The DMD Extender Configuration Utility is Copyright 2013 Dr Pinball.

Installation

Please visit our web site to obtain the latest version of the utility from:

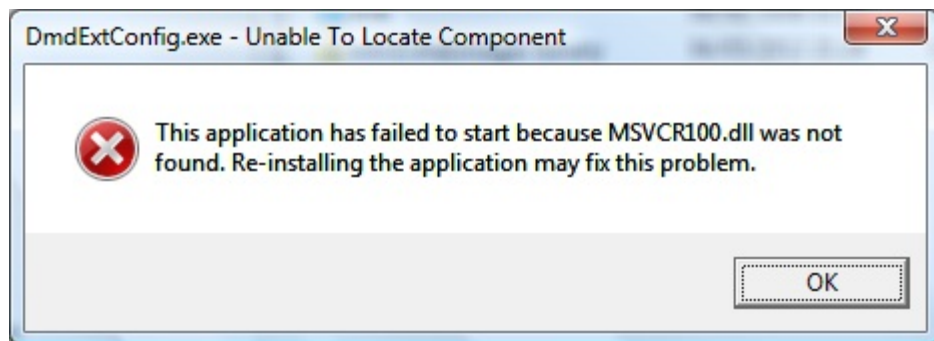
www.drpinball.co.uk/downloads.htm

Download the file DmdExtConfig.exe and copy this file onto the root directory of the SD Card.

Running for the First Time

Insert the SD Card into a Windows computer and double click on the file DmdExtConfig.exe. The application will start to execute.

You may be presented with the following message:



If this occurs, please download 'Microsoft Visual C++ 2010 Redistributable Package (x86)' from the following location:

<http://www.microsoft.com/en-us/download/details.aspx?id=5555>

When the application runs successfully for the first time it will create a backup of the configuration files and place them on the SD Card. You may see two new files as follows:

- pinball.bak
- config.bak (optional)

Please leave these files on the SD Card, as they are the backup for your configuration and contain important product keys.

How To Use the Configuration Utility

The configuration utility screen is shown in figure 1.

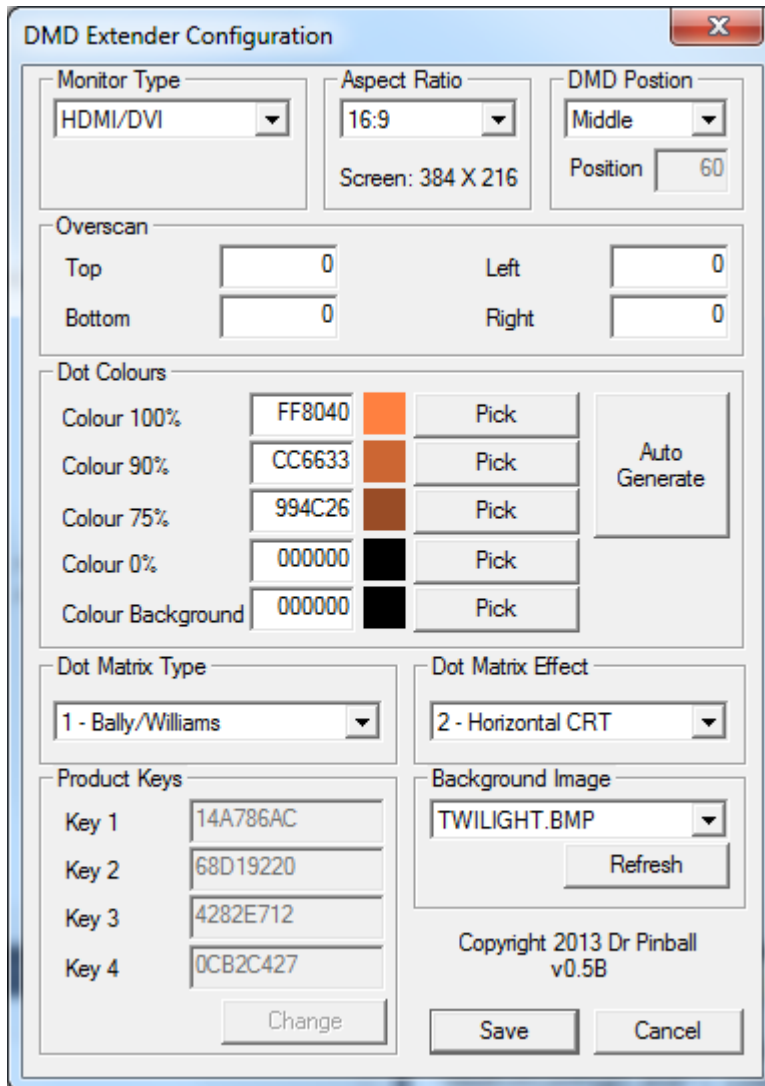


Figure 1 – DMD Extender Configuration Utility

The application is split into several sections, each one discussed below.

Monitor Type

Use the drop down list to select the type of monitor that will be connected to the Raspberry Pi mini computer. Options are as follows:

- HDMI / DVI – The HDMI socket will be used
- Composite NTSC – The Composite socket will be used – American TV/Monitor
- Composite NTSC (J) – The Composite socket will be used – Japanese TV/Monitor
- Composite PAL - The Composite socket will be used – UK / European TV/Monitor
- Composite PAL (B) – The Composite socket will be used – Brazilian TV/Monitor

The type of monitor selected has an effect on the available options in the Aspect Ratio section.

Aspect Ratio

The aspect ratio of a TV or Monitor defines the relative sizes of the screen's sides and has an effect on

what is the most ideal screen resolution to be used.

Use the drop down list to select the size of screen that will be connected to the Raspberry Pi mini computer. Options (with general guidelines) are as follows:

- 4:3 - Portable and small sized CRT and Flat Panel TV
- 14:9 – Large sized CRT, not commonly found. Use 16:9 first.
- 16:9 – Larger sized / modern CRT and Flat Panel TV / Monitor
- 16:10 – Modern HDMI / DVI flat panel Monitor.

When selecting one of the options the new screen resolution in pixels is shown underneath. This resolution should be used when creating a background image for your DMD Extender.

Please note that aspect ratio 16:10 is not available if the Monitor Type is set to any of the Composite types.

DMD Position

This section allows selection of the position of the DMD section of the screen. The DMD section is the part of the screen that displays the dot matrix information. It is always 384 X 96 pixels.

You can decide to have the DMD section at the Top, Middle or Bottom of the screen, or choose a Custom value somewhere between these settings.

When choosing Top, Middle or Bottom the Position field shows the calculated position.

When choosing Custom the Position field becomes available to manually enter a position.

Use the Position value to help when designing a background image – this is the area you should avoid having an image in, it should be set to the background colour.

Changing the Aspect Ratio will automatically change the DMD Position value, unless Custom is selected.

Overscan

This section allows fine tuning the border around the screen. It is most useful for Composite type displays. If the screen output shows a large border or seems offset, it is possible to amend the values to shift the screen in a particular direction as follows:

- A positive value moves the screen away from the selected border.
- A negative value moves the screen closer to the selected border.

For small adjustments start with a value of +10 or -10.

Dot Colours

The dot matrix display generated by the pinball machine uses 4 brightness of dot – 100%, 90%, 75% and 0%(off).

The DMD Extender allows the user selection of the colours displayed for the the 4 brightness levels.

Additionally a background colour can be chosen which will fill the screen if no background image is supplied, or allow matching with the background image in the case where an image is supplied.

The user can enter values into the edit fields for each colour. The values are 6 character hexadecimal numbers representing the Red, Green and Blue components of the colour. This is a standard way of representing a 24 bit colour.

To make the process easier it is possible to select the corresponding Pick button and use the standard Windows colour picker dialog to choose a colour.

As a further help, after choosing the 100% colour selecting the 'Auto Gen' button will automatically calculate the 90% and 75% colours.

The selected colour is always shown in a square next to the relevant edit field and button.

Dot Matrix Type

Different manufacturers use slightly different screen logic and timings. The DMD Extender is capable of supporting different types – use this section to set the type of pinball machine being used. The current available types are:

- Bally / Williams
- Data East / Sega 128 X 32 dot

Other types will become available as the logic and timings are developed for these machines.

Dot Matrix Effect

This section allows selection of a variety of effects that can be applied to the dots, as follows:

- Normal dots – traditional round dots
- Horizontal CRT – scan line simulation horizontally
- Vertical CRT- scan line simulation vertically

Background Image

This section allows selection of a background image to use on the DMD Extender screen. The drop down list shows all bitmap image files on the SD Card that have a valid name for the Extender software i.e 8.3 format with .bmp extension.

Use the Refresh button to update the list – useful if you copy a new file onto the SD Card which you would like to select.

If no image is required select <No Image>.

Product Keys

These values are shown for reference only and cannot be amended.

Save / Cancel

Selecting the Save button writes the configuration settings to the two configuration files pinball.txt and config.txt.

Selecting Cancel exits the application without any changes being made.