

## **Sinden Lightgun Documentation V1.5 24/01/21**

**For up to date documentation and help videos, please see the wiki:**

[https://sindenlightgun.miraheze.org/wiki/Main\\_Page](https://sindenlightgun.miraheze.org/wiki/Main_Page)

**Or come join us on the Discord for realtime help and discussion:**

<https://discord.com/invite/B67hgt4>

This is a very early draft version of the documentation to get everyone up and running as quick as possible.

Connect the Sinden Lightgun, Run the windows software Lightgun.exe in the provided archive.

Firstly it is a good idea to go into "Select Lightgun" and select your lightgun from the list. If you get the lightgun info you can see if there is a firmware upgrade. If there is then it is probably worth updating.

Make sure you don't disconnect while it is updating, it is best just to leave your PC alone till it finishes. It takes about 30 seconds.

Next up, make sure your TV is on gamemode. Also go into your windows mouse settings and make sure the speed is at the maximum. Then go into cursor offset, enter your approx tv size and click calculate. Then save. This is because the software takes into account the offset between the camera barrel and the sights so the sights remain very accurate regardless of distance.

Now go to the Configuration screen so you can see what is happening. Click start in the top right. Click the back right side button on the lightgun to generate a border. With any luck it should work straight away and control the cursor accurately.

If it is not picking up the border very well you need to adjust the settings.

The most important 2 are contrast and brightness. If the border is too dim and not showing on the right you need to increase brightness and contrast. If the border is bright but the background is too bright then you need to lower them.

If you can see the border well on the left screen but not the right, try increasing the border colour radius a bit to say 250.

You can experiment with some of the profiles at the bottom which use a combination of settings to experiment with. See if you can find a good setup for your environment.

If your tv is on a dim power saving backlight setting it is best to put it on normal brightness as this makes everything simpler although it shouldn't be a requirement.

You need to use the video screen on the right to work out what it is seeing that is working and what is not. An example is that the border is merging with the background, if that happens the lightgun can't track the border.

This is the purpose of the outer black border. If your background behind the tv is not bright white or you have a dark bezel on your tv / cabinet you probably don't need the outer black border and it can be disabled under the border tab. The black outer border especially helps with sunlight.

In general you don't need to change the other camera settings. If you click "Camera Controls" you can change the brightness and contrast with the slider and see what effect it is having realtime.

To perform calibration go to alignment and use the arrows to line up the cursor with the sights and save.

“Only match where pointing” really helps the tracking if you have a lot of background light noise like sunlight but offscreen reload doesn’t work.

If you want the software to automatically connect on launch then tick the auto start checkbox.

If your video processing performance is poor >10ms, you may want to reduce the resolution to 320x240. Disabling the video preview helps also “Show Raw Video”, “Show Processed Video” and “Show Rectangle”. With a lower resolution you may need a slightly thicker border than with high resolution.

Under the border tab you can choose the border colours. It makes sense for the outer border to always be black. The primary border colour is also used by the software to track as it looks or a match of that colour. Light Blue RGB 0,255,255 works quite well but needs to be quite thick compared to white.

If you have a 4:3 game, you can choose this option to draw the border around the 4:3 game screen which looks better.

Under the cursor offset tab, you may need to tick the Aspect Ratio 16:9 to 4:3 button. You don’t need this for Mame, but you might for something like Mednafen. It all depends on where the game thinks MouseX Zero is. Mame thinks it is the left side of the game, other games might think it is the very left of the full screen. Games and emulators that take over the full screen but play in 4:3 like Sega Model 2 emulator and also PC games shouldn’t need any 4:3 adjustment because everything has gone to 4:3.

Lightgun buttons are changable in the software but the default is:

Trigger = Left Mouse Offscreen = Right Mouse

Pump Action = Right Mouse

Left Front = Right Mouse

Back Left = Middle Mouse

Front Right = Keyboard 1 Offscreen = Keyboard 5

Back Right = Show/Hide Border

Dpad = Keyboard Up/Down/Left/Right

## **Border**

Sinden Lightgun software is the best way to add a border. It automatically adjusts the aim to track the exact border. The thickness of the white border doesn’t matter for alignment but the thickness of the outer black border does. You might not need the outer black border based on your environment. I don’t use it as standard.

If the Sinden Lightgun software is not able to add the border over your game/emulator then you can usually add the border in the emulator/frontend. So Mame, RetroArch, Sega M2 Emulator and Hyperspin are all good with this. Border samples were included in the archive.

Alternatively you can run your game/emulator in a full screen “window” which usually helps with the border overlay.

Borderless Gaming utility and/or windowed borderless gaming can also help. So the game looks full screen but is actually a window which allows you to add a border over easier.

The plan over time is to get a good border solution that works well for everything across all hardware.

## **Sleep Mode**

If enabled then if there is no button pushed on the lightgun for that period of time it will stop processing frames to save computer resource. Additionally it will remove the dynamic border if that option is selected. Pushing any input / button will awaken it.

## **2 Player**

You need to run 2 instances of the software, 1 for each lightgun in a separate folder.

If when you activate player 2, player 1 stops working, try connecting to different usb ports, so for example connect one to a blue USB3 port and one to a normal USB2 port. This shouldn't be necessary but a couple of users have had this issue so currently investigating.

## **Windows 7,8**

For windows 7 and 8 you may need a driver for the lightgun. In Device Manager you will probably find Sinden Lightgun listed somewhere with an error. Please use the INF file in the windows driver folder in the archive. For Windows 8 you may need to disable driver signing while you install. A signed driver is a work in progress, sorry about the inconvenience.

## **Multiple Monitors / Displays**

Windows interprets the lightgun coordinates across the whole combined display if you have an extended desktop, so if you have the border on Screen 1 and you are 75% across, windows may map that to half way across the second display. However you can change X Ratio Factor in cursor offset tab. So if you have 2 monitors the same size, if you set that to 0.5 then it should line up nicely on the left monitor if it is the one showing the border.

If you are using the right hand monitor, then you might need to add 50 to X Offset.

On the border tab you can now select which display you want the border to show on.

## **Offscreen Reload Issues**

Be careful that you don't have double offscreen reload activated, for example in Mame it has its own implementation and so does the Sinden Lightgun software, so if you are doing offscreen in the Sinden Lightgun software and in Mame then they can get in each others way.

Also if you are a bit close to the display try moving further back and seeing if it works.

## **AutoStart**

If you tick this then the lightgun will automatically begin processing on application load. You can also add autostart as a command line parameter to the exe.

## Cannot Update Firmware

Please install the FirmwareUpdateDrivers in the WindowsDriver folder.

## App keeps crashing

Some people have found this can be caused by a Bluetooth module, try disabling Bluetooth or removing your Bluetooth dongle to see if that is the cause.

## Recoil

There are basically 3 general modes for recoil, **Single Shot** for games like Time Crisis where you just fire a single shot at a time. **Automatic** for where you fire a repeating gun like a machine gun. Then **Mixed** where you might do a bit of both in a game.

## Pulse Length

In Automatic mode the length of the solenoid pulse which is basically the strength.

## Delay Between Pulses

In Automatic mode the time between pulses, higher gives more time to charge, lower gives a faster pulse rate.

## Extra Delay After First Pulse

This setting in Automatic mode, can give you Mixed mode, by adding a delay bigger than 0 it means after the first shot it will wait slightly longer. By setting it to 5 seems to be just right to not repeat pulse when you are just firing a single shot, but will jump into automatic very quickly when you hold it down.

## Calibration

New feature for version 1.5 of the software is that if you hold down DPad Left for 3 seconds then the mouse cursor will move to the centre. If you aim at the centre then your shot will calibrate, do pump action to cancel. The calibration will save by default.