

# Screen Pixel Ruler [master]

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# Contents

<b>Overview</b>	<b>5</b>
Features . . . . .	5
Installation . . . . .	5
Providing feedback . . . . .	5
<b>User Interface</b>	<b>7</b>
Rotating the ruler . . . . .	7
Flipping the ruler . . . . .	8
Shifting to the cursor . . . . .	8
Freezing the Cursor . . . . .	8
Exiting the software . . . . .	8
Accessing this help . . . . .	8
<b>Guidelines</b>	<b>9</b>
Adding and Removing Guidelines . . . . .	9
Clearing Guidelines . . . . .	9
Locking to Guidelines . . . . .	9
Importing and Exporting Guidelines . . . . .	10
Guideline dialog . . . . .	10
<b>Keyboard Shortcuts</b>	<b>13</b>
Global Shortcuts . . . . .	13
Local Shortcuts . . . . .	13

<b>Configuration</b>	<b>15</b>
Options . . . . .	15
Location . . . . .	16
<b>Themes</b>	<b>17</b>
Supplied Themes . . . . .	17
Location . . . . .	18
Creating a Theme . . . . .	18

# Overview

Screen Pixel Ruler is an on-screen tool that helps you measure elements on web pages, documents, or software that don't have a built-in ruler. It's built on .NET Core 3.1 and inspired by MioPlanet PixelRuler. The software works on Windows 7 and later.

Free and open source, it's licensed under the BSD 3-Clause License.

## Features

- Global hotkeys to trigger functionality when other software is in focus.
- Rotatable vertical or horizontal ruler. **Ctrl + Shift + Alt + R**
- Customizable ruler themes.
- Freezable position. **Ctrl + Shift + Alt + F**
- Guideline system that can lock the mouse cursor horizontally or vertically
- Position 0 of the ruler to the current cursor location. **Ctrl + Shift + Alt + S**

A list of all shortcuts can be found [here](#).

## Installation

Screen Pixel Ruler can be installed from either the Installer or via Chocolatey Package Management by running the command `choco install screenpixelruler`. Both the installer and package will install the .NET Core 3.1 runtime if it is not present.

## Providing feedback

You can report bugs or request features by opening an issue on the GitHub repository. Any contributions are also welcome and can be done by creating a

pull request.

# User Interface

The user interface consists of a single ruler that can be displayed either horizontally or vertically.



Figure 1: The ruler user interface.

Hold down the primary mouse button on the ruler to drag it around the screen. Click the secondary mouse button on the ruler to open a context menu called the Ruler Menu.

If the mouse cursor moves beyond the right or bottom edge of the ruler, it will automatically extend. The ruler will stay extended if:

- the cursor is frozen, or
- a Guideline is set beyond the default size.

Guidelines are explained in more detail in the Guidelines section.

The primary mouse button is determined by the *Select your primary button* option in the *Mouse Settings* in Microsoft Windows.

## Rotating the ruler

The ruler can be rotated using the **Ctrl + Shift + Alt + R** key combination or by the **Ruler Menu → Rotate** menu item. This is assignable to a mouse button click via the **Rotate** function. It is not possible to have both a vertical and a horizontal ruler displayed at the same time. When rotating the ruler, the axis changes but any Guidelines are kept in the same position.



Figure 2: The horizontal ruler flipped in both directions.

## Flipping the ruler

The hatch marks on the ruler can be flipped to be displayed on the opposite side of the ruler. This is done by pressing the **Ctrl + Shift + Alt + E** key combination or by the **Ruler Menu → Flip Direction** menu item. This is assignable to a mouse button click via the **Flip** function.

## Shifting to the cursor

The ruler can be shifted to the cursor position using the **Ctrl + Shift + Alt + S** key combination. This will shift the ruler along its current axis and position the 0 on the ruler to the cursor position. Holding down the key will continuously shift the ruler to the cursor position.

## Freezing the Cursor

You can freeze the cursor on the ruler so that it does not move with the mouse. This is done by pressing the **Ctrl + Shift + Alt + F** key combination.

## Exiting the software

Exit the software by pressing the **Ctrl + Shift + Alt + X** key combination or via the **Ruler Menu → Exit** menu item.

## Accessing this help

You can access this help guide by pressing **F1** when the ruler is focused or via the **Ruler Menu → Help** menu item.



# Guidelines

Guidelines allow you to mark specific points on the ruler. These points can then be *locked on to* with the mouse and allow you to move the mouse along the locked axis.

## Adding and Removing Guidelines

Add and remove Guidelines by using the **Ruler Menu → Guidelines** submenu, keyboard shortcuts or via the *Guidelines* dialog. Adding a Guideline (keyboard shortcut **Ctrl + Shift + Alt + A**) will add a new guideline at the current cursor position on the ruler. Removing a Guideline (keyboard shortcut **Ctrl + Shift + Alt + D**) will remove the nearest guideline to the current cursor position.

Both these functions can be assigned to a mouse button.

## Clearing Guidelines

All the Guidelines can be cleared by using the **Ruler Menu → Guidelines → Clear All** submenu or via the *Guidelines* dialog. Guidelines are also cleared before Importing Guidelines.

## Locking to Guidelines

Creating a Guideline will allow you to lock the mouse to that Guideline. Locking the mouse to a Guideline will allow you to move the mouse only along the locked axis. This is done by using the **Ctrl + Shift + Alt + G** key combination.

## Importing and Exporting Guidelines

You can import and export Guidelines by using the **Ruler Menu → Guidelines → Import** or the **Ruler Menu → Guidelines → Export** submenus or via the *Guidelines* dialog. Either of these options will display a File dialog so that you can select the file to load or save.

Importing Guidelines will overwrite any existing Guidelines on the ruler.

### Guideline File Format

Guidelines can be exported to/imported from a simple text file. The file contains a list of numbers which denote the Guideline pixel position on the ruler. These files have no preferred extension.

```
20
100
150
620
```

### Guideline dialog

The Guideline dialog can be accessed via the **Ruler Menu → Guidelines → Edit Guidelines** submenu. This Dialog accepts manual input of Guideline positions and can remove specific Guidelines from the list or clear all Guidelines.



Figure 3: The Guideline dialog.



# Keyboard Shortcuts

## Global Shortcuts

These shortcuts can be used even when the Screen Pixel Ruler is not focused.

Keystroke	Function
Ctrl + Shift + Alt + R	Change ruler rotation.
Ctrl + Shift + Alt + E	Flip ruler notch direction.
Ctrl + Shift + Alt + F	Freeze the position marker on the ruler.
Ctrl + Shift + Alt + S	Move position 0 of the ruler to the current mouse position.
Ctrl + Shift + Alt + X	Exit Screen Pixel Ruler 2.
Ctrl + Shift + Alt + A	Add Guideline at current position on the ruler.
Ctrl + Shift + Alt + D	Remove nearest Guideline from current position on the ruler.
Ctrl + Shift + Alt + G	Lock mouse position to nearest Guideline.

## Local Shortcuts

These shortcuts only work when the Screen Pixel Ruler has focus.

Keystroke	Function
F1	Opens this help guide.



# Configuration

You can access the configuration by secondary clicking the ruler and selecting *Options*. This will then display the *Options window* where you can change the configuration.



Figure 4: The options window.

## Options

### Theme

Allows you to change the theme of the ruler.

### Mouse button clicks

Allows you to assign mouse button clicking the ruler to specific functionality. Supports the Primary, Middle, Button 4, and Button 5 mouse buttons. The

following functions are assignable:

- None *Do nothing for the mouse button.*
- Rotate *Rotates the ruler.*
- Flip *Flips the ruler.*
- Add Guide *Adds a guideline to the ruler.*
- Toggle Guide *Toggles the guideline at the current cursor position.*
- Remove Nearest Guide *Removes the nearest guideline to the cursor.*
- Remove All Guides *Removes all guidelines.*
- Lock to Nearest Guide *Locks the mouse to the nearest guideline to the cursor.*

## Location

Configuration is stored in two locations depending on if you installed from the installer or from the chocolatey package.

Installer: %appdata%\screenpixelruler\app.cfg

Chocolatey: %chocolateyinstall%\lib\screenpixelruler\tools\app.cfg



# Themes

Themes can change the ruler colour, size or even the interval of the hatch marks. Screen Pixel Ruler comes with some supplied themes.

## Supplied Themes

### System



The built-in default theme for Screen Pixel Ruler. This theme adjusts to your Windows 10/11 theme. On older operating systems, the theme is black text on white, with red highlighting.

### Panda



A high contrast theme with a thick ruler for easy visibility.

### MioPlanet PixelRuler



A blue gradient ruled designed to mimic the look of the MioPlanet PixelRuler software.

## White Chocolate

A white on brown coloured theme. Simple pallet swap of the Default theme.

## Location

Themes are stored in the two locations, depending on if you installed from the installer or from the chocolatey package.

Installer: %appdata%\screenpixelruler

Chocolatey: %chocolateyinstall%\lib\screenpixelruler\tools

## Creating a Theme

You can create your own themes for Screen Pixel Ruler. Themes have a **thm** file extension and are written in yaml. Looking at the existing themes can help you understand how to create your own.

## Objects

Below are objects and explanations of them that can be used in the theme file.

**<string>** A string of text.

**<boolean>** Either **true** or **false**.

**<decimal>** A decimal number like 1.0 or 1.5.

**<number>** A number like 1 or 15.

**<array>** An array of objects.

**<align>** Text alignment. Supported values are: - **Near**/0 Align text to the left/top - **Center**/1 Align text to the center - **Far**/2 Align text to the right/bottom

**<colour>** A colour value. Supported input types are: - **'#RRGGBB'** Hex/HTML Colour - **RRR, GGG, BBB** Decimal (0-255) - **ColorName** Name

**<colours>** An array of either one (**[ <colour> ]**) or two colour values (**[ <colour>, <colour> ]**). If two colours are provided then the colour will be a gradient.

For a list of colour names see the KnownColor Enum reference.

## File Format

The rendering order of the elements are Background ← Border ← Hatch Marks  
← Guidelines ← Cursor.

## Fields

Name: <string> The name of the theme.  
 Cursor: Cursor themeing.  
   Line: <colour> The cursor line colour.  
   Font: The font used for the cursor.  
     Family: <string> The font family.  
     Size: <decimal> The font size.  
     Bold: <boolean> Whether the font is bold.  
     Italic: <boolean> Whether the font is italicised.  
     Underline: <boolean> Whether the font is underlined.  
     Strikeout: <boolean> Whether the font is striked out.  
 Background: <colours> The background colours for the cursor.  
 Frozen: The frozen colours for the cursor.  
   Line: <colour> The frozen line colour.  
   Font: The font used for the frozen cursor.  
     Family: <string> The font family.  
     Size: <decimal> The font size.  
     Bold: <boolean> Whether the font is bold.  
     Italic: <boolean> Whether the font is italicised.  
     Underline: <boolean> Whether the font is underlined.  
     Strikeout: <boolean> Whether the font is striked out.  
   Background: <colours> The frozen background colours.  
 Locked: The guideline locked colours for the cursor.  
   Line: <colour> The locked line colour.  
   Font: The font used for the locked cursor.  
     Family: <string> The font family.  
     Size: <decimal> The font size.  
     Bold: <boolean> Whether the font is bold.  
     Italic: <boolean> Whether the font is italicised.  
     Underline: <boolean> Whether the font is underlined.  
     Strikeout: <boolean> Whether the font is striked out.  
   Background: <colours> The locked background colours.  
 Ruler: Ruler themeing.  
   Size: <number> The size of the ruler in pixels.  
   Background: <colours> The background colour for the ruler.  
 Border:  
   Colour: <colour> The border colour.  
   Spacing: <number> The spacing between the border and the ruler.  
 Marks: The hatch marks.

Colour: <colour> The colour of the hatch marks.  
 Size:  
   Horizontal: <number> The size of the hatch marks when horizontal.  
   Vertical: <number> The size of the hatch marks when vertical.  
 Zero: The zero hatch mark.  
   NumberVisible: <boolean> Whether the number zero is displayed.  
   Size:  
     Horizontal: <number> The size of the zero hatch mark when horizontal.  
     Vertical: <number> The size of the zero hatch mark when vertical.  
 Sizes: <array> The sizes of the hatch marks.  
   Interval: <number> The interval of the hatch marks.  
   Colour: <colour> The colour of the hatch marks.  
   Size:  
     Horizontal: <number> The size of the hatch marks when horizontal.  
     Vertical: <number> The size of the hatch marks when vertical.  
 Numbers: The numbers on the ruler.  
   Padding: Padding from the nearest edge to the numbers.  
     Horizontal: <number> Padding when ruler is Horizontal.  
     Vertical: <number> Padding when ruler is Vertical.  
   OppositeOffsetPadding: Additional padding when the ruler hatch marks a flipped.  
     Horizontal: <number> Padding when ruler is Horizontal.  
     Vertical: <number> Padding when ruler is Vertical.  
   Offset: Adds additional padding from the cursor background to the number.  
     Horizontal: <number> Offset when ruler is Horizontal.  
     Vertical: <number> Offset when ruler is Vertical.  
   Colour: <colour> The colour of the numbers.  
   Font: The font used for the numbers.  
     Family: <string> The font family.  
     Size: <decimal> The font size.  
     Bold: <boolean> Whether the font is bold.  
     Italic: <boolean> Whether the font is italicised.  
     Underline: <boolean> Whether the font is underlined.  
     Strikeout: <boolean> Whether the font is striked out.  
   Display:  
     Interval: <number> The interval at which numbers should appear.  
     Vertical: Settings for when the ruler is vertical.  
       Rotate: <boolean> Whether the numbers should be rotated by 90 degrees.  
       Alignment: <align> How the numbers should be aligned.  
     Horizontal: Settings for when the ruler is horizontal.  
       Rotate: <boolean> Whether the numbers should be rotated by 90 degrees.  
       Alignment: <align> How the numbers should be aligned.  
 Guidelines:  
   Guideline: The guidelines.  
     Colour: <colour> The colour of the guidelines.  
     Size:  
       Horizontal: <number> The size of the guidelines when horizontal.

Vertical: <number> The size of the guidelines when vertical.  
 Locked: The guideline locked onto.  
 Colour: <colour> The colour of the guideline that has been locked onto.  
 Size:  
   Horizontal: <number> The size of the guideline that has been locked onto when horizontal.  
   Vertical: <number> The size of the guideline that has been locked onto when vertical.  
 Nearest: The guideline nearest to the cursor.  
 Colour: <colour> The colour of the nearest guideline.  
 Size:  
   Horizontal: <number> The size of the nearest guideline when horizontal.  
   Vertical: <number> The size of the nearest guideline when vertical.

## UI Theme Elements

This section helps explains the user interface theme elements.

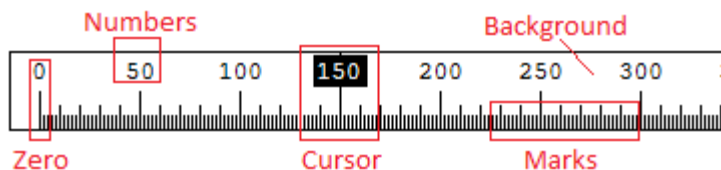


Figure 5: The Ruler user interface with theme elements highlighted.

Zero is the Zero Mark which is explained further below.

Numbers are configured in **Ruler → Number** section. The **Ruler → Number → Display → Interval** determines how often the numbers appear. An interval of 50 means that numbers will appear at the 50th, 100th, 150th, etc hatch marks. The other properties under **Ruler → Number** determine the font, colour and size of the numbers.

Cursor is explained further below.

Background is the background colour of the ruler. This is set at **Ruler → Background** and can be a single colour or a gradient when two colours are provided.



Figure 6: The cursor that appears in the ruler.

The cursor is displayed at the position of the mouse cursor on screen, relative to the ruler. If the cursor is to the far top or far left to the ruler, the it does not appear.

The above options are all configured in the **Cursor** section. **Cursor** → **Frozen** is used when the cursor is frozen. **Cursor** → **Locked** is used when the cursor is locked to a guideline.

**Offset Ruler** → **Cursor** → **Offset** is used to add additional padding between the cursor number and the cursor background square. The padding is added to the top of the number unless the number is rotated, if rotated then it is added to the right side.

**Cursor Background** **Cursor** → **Background** is used to set the background colour of the cursor square.

**Cursor Line** **Cursor** → **Line** is used to set the colour of the line of the cursor.



Figure 7: The ruler hatch marks.

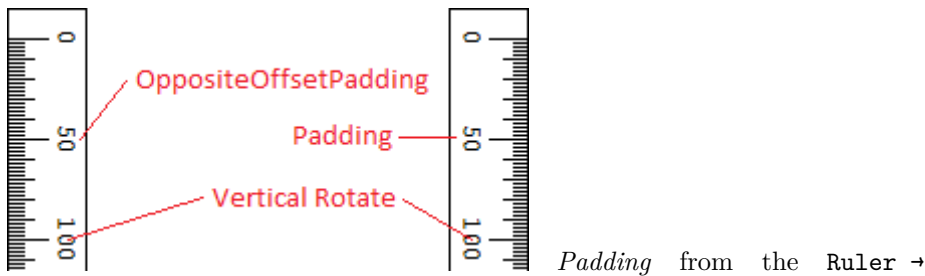
**Zero Mark** hatch mark is provided by the **Ruler** → **Marks** → **Zero** → **Size** property. You can also set the **Ruler** → **Marks** → **Zero** → **NumberVisible** property to **false** to omit the 0 number.

Size interval 10 and Size Interval 50 hatch marks are provided by the **Ruler** → **Marks** → **Sizes** array. Below is an example of a 50 pixel interval hatch mark:

```
...
  Marks:
    Sizes:
      - Interval: 50
        Colour: #000000
        Size:
          Horizontal: 20
          Vertical: 40
...

```

**Marks Size** hatch marks are provided by the **Ruler** → **Marks** → **Size** properties. The colour is provided by the **Ruler** → **Marks** → **Colour** property. Every even pixel on the ruler will have a hatch mark provided by this value. Set the size to 0 to omit the default hatch marks.



Numbers → Padding property, applies padding to the numbers from the nearest edge.

*Opposite Offset Padding* under the Ruler → Numbers → `OppositeOffsetPadding`) property is the additional padding that is applied when the ruler is flipped to the opposite default direction. This is applied in addition to any padding that is applied via Ruler → Numbers → Padding property.

*Vertical Rotate* (the Ruler → Numbers → Display → Vertical → Rotate and Ruler → Numbers → Display → Horizontal → Rotate properties) rotates the numbers 90 degrees.

Note: The direction of the rotated numbers cannot be changed.

## Default Values

### Font

Family: `Courier New`  
 Size: `9`  
 Bold: `false`  
 Italic: `false`  
 Underline: `false`  
 Strikeout: `false`

Cursor → Locked

Cursor → Frozen

Cursor → Frozen

Cursor

Ruler → Background

`White`

Ruler → Marks → Zero → NumberVisible

`false`

Ruler → Marks → Zero → Colour

Ruler  $\rightarrow$  Marks  $\rightarrow$  Colour  
**Transparent**

Ruler  $\rightarrow$  Guidelines  $\rightarrow$  Nearest  
Ruler  $\rightarrow$  Guidelines  $\rightarrow$  Guideline

Ruler  $\rightarrow$  Guidelines  $\rightarrow$  Locked  
Ruler  $\rightarrow$  Guidelines  $\rightarrow$  Guideline

Ruler  $\rightarrow$  Guideline  $\rightarrow$  Guideline  $\rightarrow$  Size  
Ruler  $\rightarrow$  Size

Ruler  $\rightarrow$  Guideline  $\rightarrow$  Guideline  $\rightarrow$  Colour  
Ruler  $\rightarrow$  Marks  $\rightarrow$  Colour