

## cedargrove\_waveviz

A CircuitPython class to create a positionable **displayio.TileGridGroup** object from a **synthio.waveform** wave table or **synthio.Envelope** object. The class inherits all properties of a TileGrid object including **bitmap**, **pixel\_shader**, **x**, **y**, and provides the bitmap properties of **width**, **height**.

[https://github.com/CedarGroveStudios/CircuitPython\\_WaveViz](https://github.com/CedarGroveStudios/CircuitPython_WaveViz)

- Author(s): JG for Cedar Grove Maker Studios

### Implementation Notes - Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://circuitpython.org/downloads>

```
class cedargrove_wavebuilder.WaveViz(*, wave_table, x, y, width,height, plot_color=0x00FF00, grid_color=0x808080,
back_color=None, auto_scale=True, env_plot=False)
```

Create a positionable **displayio.TileGrid** object from a **synthio.ReadableBuffer** wave table.

<b>Parameters:</b>	<ul style="list-style-type: none"><li>• <b>wave_table</b> – The <b>synthio</b> waveform object of type 'h' (signed 16-bit). No default.</li><li>• <b>x</b> — The tile grid's x-axis coordinate value. No default.</li><li>• <b>y</b> — The tile grid's y-axis coordinate value. No default.</li><li>• <b>width</b> — The tile grid's width in pixels. No default.</li><li>• <b>height</b> — The tile grid's height in pixels. No default.</li><li>• <b>plot_color</b> – The waveform trace 24-bit integer RGB color value. Defaults to 0x00FF00 (green).</li><li>• <b>grid_color</b> – The perimeter grid 24-bit integer RGB color value. Defaults to 0x808080 (gray).</li><li>• <b>back_color</b> – The grid background 24-bit integer RGB color value. Defaults to None (transparent).</li><li>• <b>auto_scale</b> — Automatically adjust resultant plot to the wave table's full-scale value. Defaults to True (auto scale enabled).</li><li>• <b>env_plot</b> — Plot an envelope object. Defaults to False (plot a waveform object).</li></ul>
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wave\_table(new\_wave\_table)

The **synthio** waveform object. Read/write.

width

The tile grid's width in pixels. Read-only.

height

The tile grid's height in pixels. Read-only.

auto\_scale(new\_auto\_scale)

Automatically scale the plot. When False, the scale is set by a 15-bit signed integer maximum value of 32767. When True, the scale automatically adjusts to the wave table's maximum value. Read/write.

max\_result

The full-scale value of the plotted image (from **wave\_table**). Read-only.