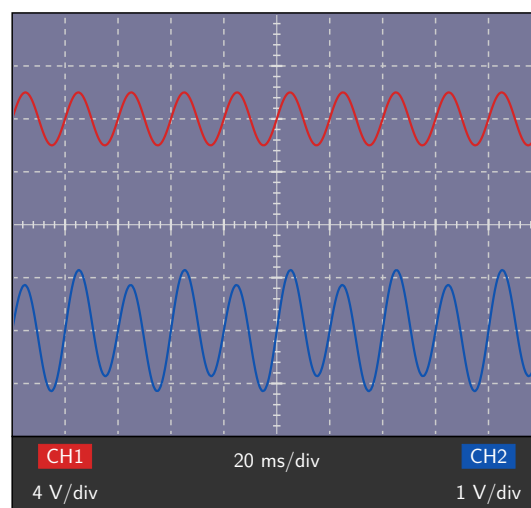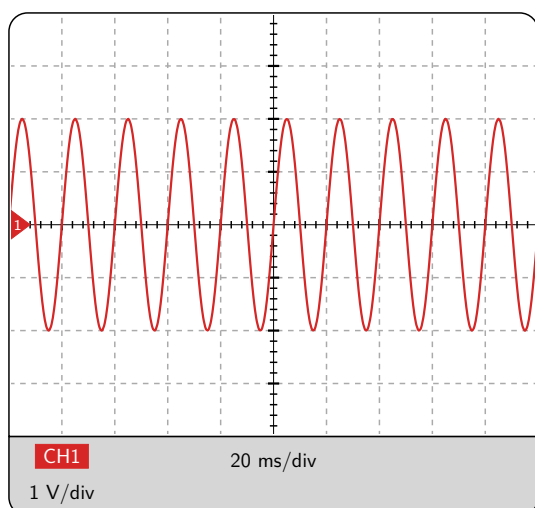# TikZ Oscilloscope Package

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Version 0.2.0 of October 7, 2023

1 Introduction

This package is modest alternative to the `pst-osci` package (not maintained anymore). It allows you to draw oscilloscope "screen shots" with LaTeX, TikZ and pgfplots.

Some features are not implemented yet, but the package is already usable for basic representations. I'm doing this for fun and still learning how to make LaTeX packages. Therefore, I'm open to any suggestion or contribution :

<div align="center">

`contact at ensciences dot fr`

</div>

A bug tracker is available at :

<div align="center">

`https://framagit.org/ThibGiauffret/latex_packages/-/issues`.

</div>

Feel free to report any bug you find or send suggestions.

Important note : Please indicate the concerned package name in the title of the issue. For example, if you want to report a bug about this package, please use the following title : `[tikz-osci] My bug report title`.

2 Usage

The package is loaded with the command `\usepackage{tikz-osci}`. It defines a single command, `\osci`, which takes a list of options as argument. The options allow you to configure and customize the oscilloscope screen view :

|		
`scale`	Scale of the oscilloscope (with `scalebox`).	Default: 1.
`rounded corners`	Radius of the oscilloscope corners (in pt).	Default: 10.
`second channel`	1 if the second channel is enabled, 0 otherwise.	Default: 0.
`screen offset one`	Vertical screen offset of the first channel.	Default: 0.
`screen offset two`	Vertical screen offset of the second channel.	Default: 0.
`time div`	Time division (in ms).	Default: 20.
`voltage div one`	Voltage division of the first channel (in V).	Default: 1.
`voltage div two`	Voltage division of the second channel (in V).	Default: 1.
`sample rate`	Sample rate.	Default: 200.
`xy mode`	1 if the oscilloscope is in XY mode, 0 otherwise. **Not working yet !**	Default: 0.
`func one`	Expression of the first channel (pgf maths format).	Default: `2*sin(2*180/0.020*x)`.
`func two`	Expression of the second channel (pgf maths format).	Default: `1*sin(2*180/0.020*x) + 0.2*sin(2*180/0.040*x)`.
`indicators`	1 if the channel indicators are enabled, 0 otherwise.	Default: 1.
`color one`	Color of the first channel (in hexadecimal).	Default: D62626.
`color text one`	Text color of the first channel (in hexadecimal).	Default: FFFFFF.
`color two`	Color of the second channel (in hexadecimal).	Default: 1053AF.
`color text two`	Text color of the second channel (in hexadecimal).	Default: FFFFFF.
`color xy`	Color of the XY mode (in hexadecimal).	Default: 2E8B73.
`color text xy`	Text color of the XY mode (in hexadecimal).	Default: FFFFFF.
`graph back color`	Background color of the graph (in hexadecimal).	Default: FFFFFF.
`info back color`	Background color of the information box (in hexadecimal).	Default: D6D6D6.
`info text color`	Text color of the information box (in hexadecimal).	Default: 000000.
`main axis color`	Color of the main axis (in hexadecimal).	Default: 000000.
`grid color`	Color of the grid (in hexadecimal).	Default: CCCCCC.

A quick documentation in french is available here :

`https://www.ensciences.fr/read.php?article=1220`

3 Examples

For more examples, see the `tikz-osci-example.tex` file.

```
\osci[%
    scale=0.8,
    second channel=1,
    screen offset one=2,
    screen offset two=-2,
    time div=20,
    voltage div one=4,
    voltage div two=1,
    sample rate=200,
    xy mode=0,
    func one=2*sin(2*180/0.020*x),
    func two=1*sin(2*180/0.020*x)+0.2*sin(2*180/0.040*x),
    color one=D62626,
    color two=1053AF,
    color xy=2E8B73,
    graph back color=669966,
    info back color=D6D6D6,
    info text color=000000,
    main axis color=000000,
    grid color=CCCCCC
]
```
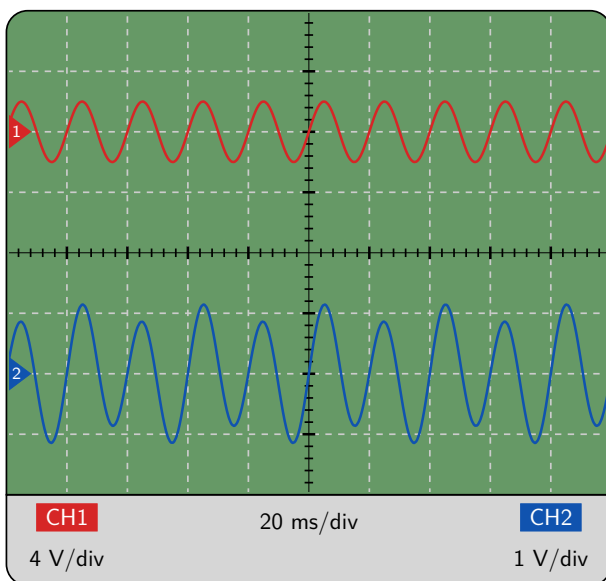

4 License

This package is distributed under the terms of the **LaTeX Project Public License** (LPPL), version 1.3c or later. The latest version of this license is available at `http://www.latex-project.org/lppl.txt`.

5 Credits

This package requires the following packages :

- `xcolor` maintained by the *LaTeX3 Project* (license LPPL 1.3c) ;

- `tikz` maintained by the *TikZ and PGF Project* (license LPPL 1.3c) ;

- pgfkeys maintained by the *Till Tantau* (license LPPL) ;

- pgfplots maintained by the *Christian Feuersänger* (license LPPL).

6   Changelog

- **0.2.0** :

    Added `color text one`, `color text two` and `color text xy` options.

    Added `indicators` option.

    Added `rounded corners` option.

    Fixed the main axis color not being applied.

    Reworded the documentation and the example file.

- **0.1.1** :

    Renamed `sub axis color` to `grid color`.

    Renamed `expr one` and `expr two` to `func one` and `func two`.

    Updated package files names.

- **0.1.0** : Initial release. XY mode not implemented yet.