

SocExplorer Wiki

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General description

SocExplorer is an open source generic System On Chip testing software/framework. We write this software for the development and the validation of our instrument, the [Low Frequency Receiver](#) (LFR) for the Solar Orbiter mission. This instrument is based on an [actel FPGA](#) hosting a [LEON3FT](#) processor and some peripherals. To make it more collaborative, we use a plugin based system, the main executable is SocExplorer then all the functionality are provided by plugins. Like this everybody can provide his set of plugins to handle a new SOC or just a new peripheral. SocExplorer uses [PythonQt](#) to allow user to automate some tasks such as loading some plugins, configuring them and talking with his device. SocExplorer is provided under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

To install it

- If you are running windows you can directly download the setup [here](#). (Outdated)
Please note that if you are running Windows you will have some limitations, we spend much less effort on windows support than linux.
- If you are a Fedora user you can directly use the copr repository [here](#)
Or our repository [here](#)
- If you are running Linux you can follow theses [steps](#).
We have never tried any other Unix like Os such as Mach or BSD, it could compile since it rely on Qt but the installation would break and some plugins won't compile.

Reporting a bug

To report bugs, you need to register in our system then you can report bugs [here](#).

If you don't want to register you can simply send a [mail](#).

Use cases

Use case 1

In this case, the [AHBUARTplugin](#) and the [memctrlplugin](#) are loaded. The ahbuartplugin is called a root plugin because it is at the top of the plugin hierarchy, it makes the connection between SocExplorer and the AMBA bus. Talking through the root plugin, the memctrlplugin allows you to test some memory space at a given address.

Use case 2

In this use case, the root plugin is the [rmapplugin](#), this plugin allows you to talk through either the [GRESB](#) or the [stardundee SpaceWire-USB Brick](#). The second loaded plugin is the [genericrwplugin](#). This plugin is a simple hexadecimal editor, you can use it to view or edit any space of the SOC memory, see below in the SocExplorer screenshot.

Videos

This video is quite outdated but gives a good overview of what SocExplorer is able to do.

Loading the player ...

```
jwplayer("video_1").setup({ file: "https://hephaistos.lpp.polytechnique.fr/data/SocExplorer_Overview.webm", height: 300, width: 400 });
```

If the video doesn't load you can directly watch it from [here](#)

Screenshots

[SocExplorer1.png](#)

[SocExplorer2.png](#)

Updated [about 6 years](#) ago by [3705eea857da10c253f9351365c0fa3a?rating=PG&size=14&default=mm](#) [Alexis Jeandet](#)

Files

SocExplorerUseCase2.png	67 KB	30/03/2014	Alexis Jeandet
SocExplorerUseCase1.png	60.4 KB	30/03/2014	Alexis Jeandet
SocExplorer1.png	208 KB	30/03/2014	Alexis Jeandet
SocExplorer2.png	178 KB	19/06/2014	Alexis Jeandet