# Factory Loader using JTAG/SWD

## Prerequisites

1. Install Python dependencies such as PyCryptodome, func\_timeout module
2. OpenOCD
   1. On windows, execute the following command to install OpenOCD (For example: version 0.10.0):

|  |
| --- |
| xpm install --global @xpack-dev-tools/openocd@0.10.0-13.1 |

* 1. On Linux, execute the following command to install OpenOCD

|  |
| --- |
| sudo apt install openocd -y |

## Programming using JTAG/SWD

Factory Loader supports the INP3000, JLink, and InnoPhase BMP board using JTAG or SWD.

Programming using INP3000 (SWD):

|  |
| --- |
| ./script/factory\_loader.py inp3000\_swd helloworld\_config.json |

Programming using INP3000 (JTAG):

|  |
| --- |
| ./script/factory\_loader.py inp3000\_jtag helloworld\_config.json |

Programming using InnoPhase BMP:

|  |
| --- |
| ./script/factory\_loader.py bmp\_swd helloworld\_config.json |

Programming using JLink:

|  |
| --- |
| ./script/factory\_loader.py jlink\_jtag helloworld\_config.json |

## Programming Multiple Talaria TWO Modules using SWD

Factory loader tool supports programming multiple Talaria TWO modules using SWD interface, where Talaria TWO modules are differentiated with the FTDI serial number.

A diagram of a computer program

Description automatically generated

Figure 8: Programming multiple Talaria TWO modules using SWD

**Programming using INP3000(SWD) on Windows**:

|  |
| --- |
| .\script\factory\_loader.py inp3000\_swd\_serial helloworld\_config.json --adapter\_serial=2224-11 --port=10010 --gdbport=3333 --ocdserverport=6666 --bulkerase  .\script\factory\_loader.py inp3000\_swd\_serial helloworld\_config.json --adapter\_serial=2224-12 --port=10020 --gdbport=3334 --ocdserverport=6668 --bulkerase  .\script\factory\_loader.py inp3000\_swd\_serial helloworld\_config.json --adapter\_serial=2224-16 --port=10030 --gdbport=3335 --ocdserverport=6670 --bulkerase  .\script\factory\_loader.py inp3000\_swd\_serial helloworld\_config.json --adapter\_serial=30004025 --port=10040 --gdbport=3336 --ocdserverport=6672 --bulkerase |

In the above example,

1. port is the port to listen for HIO commands
2. adapter\_serial is the serial number of OCD adapter
3. gdbport is the GDB remote protocol port
4. ocdserverport is the OpenOCD server port
5. bulkerase is to Enable bulk erase

**Note**:

* Factory loader programming of multiple modules on Windows works only if port numbers are specified in sequence as 10010, 10020, 10030, 10040.
* Sleep of 1 second between each SWD command execution is recommended

**Programing using INP3000(SWD) on Linux**:

|  |
| --- |
| ./script/factory\_loader.py inp3000\_swd\_serial helloworld\_config.json --adapter\_serial=2224-11 --autoport  ./script/factory\_loader.py inp3000\_swd\_serial helloworld\_config.json --adapter\_serial=2224-16 --autoport  ./script/factory\_loader.py inp3000\_swd\_serial helloworld\_config.json --adapter\_serial=2224-12 --autoport  ./script/factory\_loader.py inp3000\_swd\_serial helloworld\_config.json --adapter\_serial=30004025 --autoport |

**Bulkerase using INP3000(SWD) on Windows:**

|  |
| --- |
| .\script\factory\_loader.py inp3000\_swd\_serial dual\_stack.json --adapter\_serial=2224-11 --port=10010 --bulkerase |

**Bulkerase using INP3000(SWD) on Linux**:

|  |
| --- |
| .\script\factory\_loader.py inp3000\_swd\_serial dual\_stack.json --adapter\_serial=2224-11 --bulkerase |