

- <http://www.seeedstudio.com/wiki/FST-01>
- <https://gitorious.org/gnuk>
- <http://www.fsj.org/doc-gnuk/index.html>
- build one from ST-Link clone
<https://blog.danman.eu/2-usb-crypto-token-for-use-with-gpg-and-ssh/>

update vid and pid in compiled binary

since version 1.2.8 you need to insert vid and pid into the binary by running

```
make build/gnuk-vidpid.elf
```

and then flash the resulting gnuk-vidpid.bin binary into your FST-01

SWD flashing using ST Link v2

```
usb 1-1.6.4: new full-speed USB device number 16 using ehci-pci
usb 1-1.6.4: New USB device found, idVendor=0483, idProduct=3748
usb 1-1.6.4: New USB device strings: Mfr=1, Product=2, SerialNumber=3
usb 1-1.6.4: Product: STM32 STLink
usb 1-1.6.4: Manufacturer: STMicroelectronics
usb 1-1.6.4: SerialNumber: Qÿl^FH<85>PH'Q^C<87>
```

- <http://www.gniibe.org/memo/development/fst-01/dongle/fst-01-swd-connection>
- <http://no-passwd.net/askbot/question/48/how-can-i-re-flash-fst-01/>

Problem:

```
dpavlin@blue:/blue-zfs/STM32/FST-01/gnuk/tool$ ./stlinkv2.py -s
ST-Link/V2 version info: 2 17 4
Change ST-Link/V2 mode 0002 -> 0001
CORE: 0de01477, CHIP_ID: 00000000
Flash ROM read protection: off
Option bytes: 00000000
Core does not halt, try API V2 halt.
ValueError('Status of core is not halt.', 128)
```

after several re-runs:

```
dpavlin@blue:/blue-zfs/STM32/FST-01/gnuk/tool$ ./stlinkv2.py -s
ST-Link/V2 version info: 2 17 4
Change ST-Link/V2 mode 0002 -> 0001
CORE: 1ba01477, CHIP_ID: a0036410
Flash ROM read protection: off
Option bytes: a0036410
Core does not halt, try API V2 halt.
ValueError('Status of core is not halt.', 128)
```

after a bit of fiddling with cables (it's always cables, right?)

Lovro contributed that if you are getting continuous output like this

```
ST-Link/V2 version info: 2 17 4
Change ST-Link/V2 mode 0002 -> 0001
Core does not halt, try API V2 halt.
ValueError('Status of core is not halt.', 128)
```

then run this while holding reset active (hold tweezers on both side of C3)
that should hand the uC in a mode that will enable stlinkv2.py script to turn off the flash rom
protection and erase the flash while doing that

```
dpavlin@blue:/blue-zfs/STM32/FST-01/gnuk$ sudo ./tool/stlinkv2.py -s
ST-Link/V2 version info: 2 17 4
Change ST-Link/V2 mode 0002 -> 0001
CORE: 1ba01477, CHIP_ID: 20036410
Flash ROM read protection: ON
Option bytes: 03ffffffe
The MCU is now stopped.
SUCCESS
```

```
dpavlin@blue:/blue-zfs/STM32/FST-01/gnuk$ sudo ./tool/stlinkv2.py -u
ST-Link/V2 version info: 2 17 4
Change ST-Link/V2 mode 0002 -> 0001
Status is 0081
CORE: 1ba01477, CHIP_ID: 20036410
Flash ROM read protection: ON
Option bytes: 03ffffffe
Flash ROM read protection disabled. Reset the board, now.
SUCCESS
```

plugin, plugout st-link/v2

```
dpavlin@blue:/blue-zfs/STM32/FST-01/gnuk$ sudo ./tool/stlinkv2.py -s
ST-Link/V2 version info: 2 17 4
Change ST-Link/V2 mode 0100 -> 0001
CORE: 1ba01477, CHIP_ID: 20036410
Flash ROM read protection: off
Option bytes: ffff5aa5
Flash ROM blank check: True
SUCCESS
```

```
dpavlin@blue:/blue-zfs/STM32/FST-01/gnuk$ sudo ./tool/stlinkv2.py -b ../binaries/gnuk/gnuk.bin
ST-Link/V2 version info: 2 17 4
Change ST-Link/V2 mode 0001 -> 0001
CORE: 1ba01477, CHIP_ID: 20036410
Flash ROM read protection: off
Option bytes: ffff5aa5
Flash ROM blank check: True
SPI Flash ROM ID: bf254a
WRITE
VERIFY
PROTECT
Flash ROM read protection enabled. Reset the board to enable protection.
SUCCESS
```

power cycle

```
dpavlin@blue:/blue-zfs/STM32/FST-01/gnuk$ sudo ./tool/stlinkv2.py -s
ST-Link/V2 version info: 2 17 4
Change ST-Link/V2 mode 0100 -> 0001
CORE: 1ba01477, CHIP_ID: 20036410
Flash ROM read protection: ON
```

Option bytes: 03ffffffe
The MCU is now stopped.
SUCCESS

plugin just FST-01:

```
[ 9890.019368] usb 1-1.6.4: New USB device found, idVendor=234b, idProduct=0000
[ 9890.019372] usb 1-1.6.4: New USB device strings: Mfr=1, Product=2, SerialNumber=3
[ 9890.019374] usb 1-1.6.4: Product: GnuK Token
[ 9890.019375] usb 1-1.6.4: Manufacturer: Free Software Initiative of Japan
[ 9890.019377] usb 1-1.6.4: SerialNumber: FSIJ-1.0.4-50FF7006
```