



life.augmented

OTP hands on

Johnson Zhang

March 2021

Agenda

1 STM32CubeProgrammer

2 Uboot commands

STM32CubeProgrammer

For this hands on STM32CubeProgrammer will be use thanks to the CLI in Linux.

Use the Programmer command with “-h” to get the help :

```
STM32_Programmer_CLI -h
```

With the help try to create the command to get the OTP, command :

```
STM32_Programmer_CLI -c port=usb1 -otp displ
```

Why is this command not working ?

Programmer can communicate only with u-boot

Create a TSV to load u-boot and use it in the command line :

```
STM32_Programmer_CLI -c port=usb1 -w ./flashlayout_st-image-weston/trusted/FlashLayout_otp_stm32mp157c-dk2-trusted.tsv -otp displ
```

TSV file :

#Opt	Id	Name	Type	IP	Offset	Binary
-	0x01	fsbl1-boot	Binary	none	0x0	arm-trusted-firmware/tf-a-stm32mp157c-dk2-serialboot.stm32
-	0x03	ssbl-boot	Binary	none	0x0	bootloader/u-boot-stm32mp157c-dk2-trusted.stm32

Reset your board and stop the boot pressing a key in u-boot.

Use the “help” command and find the command used to interact with the OTP:

fuse

Use the help command and explain what should be :

- Read >>> Read shadow register
- Sense >>> Read OTP
- Prog >>> Write OTP
- Override >>> Write Shadow register

NEVER used the PROG command in this hands on

FYI : The bank “0” is the OTP.

OTP in U-boot

Read OTP 57 and 58 with the fuse command :

```
fuse sense 0 57 2
```

Display shadow values for all the OTP :

```
fuse read 0 57 2
```

Change value in the shadow register (OTP 5C) :

```
fuse override 0 57 FF
```

Read value in the shadow register (OTP 5C) :

```
fuse read 0 57 1
```

Read value in OTP 57 :

```
 fuse sense 0 57 1
```

**NEVER used the PROG
command in this hands
on**

Exercise

Read OTP 9 with u-boot command.(3 pts)

Read OTP 9 shadow with u-boot command.(3pts)

Read 8 bytes in the PMIC NVM at address 0xf8.(3pts)

**NEVER used the PROG
command in this hands
on**

References



References

OTP in u-boot:

https://wiki.stmicroelectronics.cn/stm32mpu/wiki/How_to_update_OTP_with_U-Boot

Datasheet: stpmic1.pdf

Reference manual: RM0436.pdf

Thank you