Procedure to update EEPROM for a Raspberry Pi CM4 with eMMC on a CM4IO carrier board - from a Windows 10 PC

On PC – copy some files to a USB stick for the RPi

⋯ copy *C:\Program Files (x86)\Raspberry Pi\recovery* directory and contents to a USB stick
(These files were from rpiboot setup - https://github.com/raspberrypi/usbboot)

On RPi – create new pieeprom.bin, pieeprom.sig to send back to the PC

$ cp -r /sda1/RaspberryPi/recovery # copy from USB stick to RPi
$ mv recovery recovery~~20210902~~ # rename directory
$ cd recovery~~20210902~~
$ rm pieeprom.original.bin
$ curl -L -o pieeprom.original.bin \ # get the latest file after checking GitHub
https://github.com/raspberrypi/rpi-eeprom/raw/master/firmware/stable/pieeprom-2021-07-06.bin
$ vi boot.conf # make changes, ie BOOT_ORDER
$ /bin/sh -xv **update-pieeprom.sh** # create a new pieeprom.bin, pieeprom.sig
$ cd ..
$ sudo cp -r recovery~~20210902~~ /sda1/RaspberryPi # put the new directory onto the USB stick
$ sudo CM4_ENABLE_RPI_EEPROM_UPDATE=1 rpi-eeprom-update # show the old config
*** UPDATE AVAILABLE ***
BOOTLOADER: update available
CURRENT: Tue Feb 16 13:23:36 UTC 2021 (1613481816)
LATEST: Tue Jul 6 10:44:53 UTC 2021 (1625568293)
RELEASE: stable (/lib/firmware/raspberrypi/bootloader/stable)
Use raspi-config to change the release.

VL805_FW: Using bootloader EEPROM
VL805: up to date
CURRENT:
LATEST:

On PC – flash the RPi EEPROM

⋯ copy g:\RaspberryPi\recovery~~20210902~~ to c:\Program Files (x86)\Raspberry Pi
$ cd C:\Program Files (x86)\Raspberry Pi
C:\Program Files (x86)\Raspberry Pi>**rpiboot** -d ./recovery~~20210902~~
Loading: ./recovery~~20210902~~/bootcode4.bin
Waiting for BCM2835/6/7/2711...

⋯ power down Pi, insert J2 jumper (pins 1-2), power on

Loading: ./recovery~~20210902~~/bootcode4.bin
Sending bootcode.bin
Successful read 4 bytes
Waiting for BCM2835/6/7/2711...
Loading: ./recovery~~20210902~~/bootcode4.bin
Second stage boot server
Loading: ./recovery~~20210902~~/config.txt
File read: config.txt
Loading: ./recovery~~20210902~~/pieeprom.bin
File read: pieeprom.sig
Loading: ./recovery~~20210902~~/pieeprom.bin
File read: pieeprom.bin
Second stage boot server done

⋯ response from Pi

...Reading EEPROM: 524288
...Writing EEPROM

```
...++++++++++++++++++++++++++++++..++++++++++
...Verify BOOT EEPROM
...Reading EEPROM: 524288
...BOOT-EEPROM: UPDATED
```

On RPi – check out the results

```
····power down Pi, remove jumper, power on
$ sudo CM4_ENABLE_RPI_EEPROM_UPDATE=1 rpi-eeprom-update
BOOTLOADER: up to date
  CURRENT: Tue Jul  6 10:44:53 UTC 2021 (1625568293)
   LATEST: Tue Jul  6 10:44:53 UTC 2021 (1625568293)
  RELEASE: stable (/lib/firmware/raspberrypi/bootloader/stable)
           Use raspi-config to change the release.

 VL805_FW: Using bootloader EEPROM
    VL805: up to date
  CURRENT:
   LATEST:
pi@raspberrypi:~$ vcgencmd bootloader_version
Jul  6 2021 11:44:53
version c258ef8fe1d2334a750078b17dab5e2c1a1787fc (release)
timestamp 1625568293
update-time 1630625388
capabilities 0x0000007f
pi@raspberrypi:~$ vcgencmd bootloader_config
[all]
BOOT_UART=0
WAKE_ON_GPIO=1
POWER_OFF_ON_HALT=0

# Try  SD- > USB PCIe MSD -> USB 2.0 BCM XHCI -> Network ->  Loop
BOOT_ORDER=0xf2145

# Set to 0 to prevent bootloader updates from USB/Network boot
# For remote units EEPROM hardware write protection should be used.
ENABLE_SELF_UPDATE=1
```

This procedure seems unnecessarily complicated, but appears to work.

My first choice would have entailed working with a single RPi that could upgrade itself. I've tried various native commands: `raspi-config`, `rpi-eeprom-config`, `rpi-eeprom-update`, with no luck.

Second choice would avoid the USB stick, but would require a W10 `rpi-eeprom-config` utility.

Thanks to James A Chambers for his article that inspired me not give up on BOOT_ORDER.
https://jamesachambers.com/full-compute-module-4-raspberry-pi-setup-imaging-guide