How to fix a Kindle Voyage stuck in a boot loop

Fixing a boot loop issue on a Kindle Voyage using the internal serial header.

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This document was generated on 2019-12-02 02:14:37 PM (MST).

INTRODUCTION

If your Kindle Voyage is stuck in a boot loop, this might fix it. However, it is somewhat challenging and involves soldering, so make sure you read the entire guide before beginning.

🔧 TOOLS:

- iFixit Opening Tools (1)
- Phillips #00 Screwdriver (1)
- Soldering Iron (1)
- Breadboard (1)
- USB-Serial adapter (1)
- Breadboard wires (1)
- Alligator wire (2)

⚙ PARTS:

- Resistor (2)
  10-100k ohm
- Diode (3)
- Thin Electrical Wire (1)

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Step 1 — Back Panel

- Insert a plastic opening tool between the plastic panel shown on the device.

- Use the tool to pry the plastic away from the device.

- (i) There will be adhesive holding this piece of plastic to the device. You may have to pull pretty hard to get it separated.
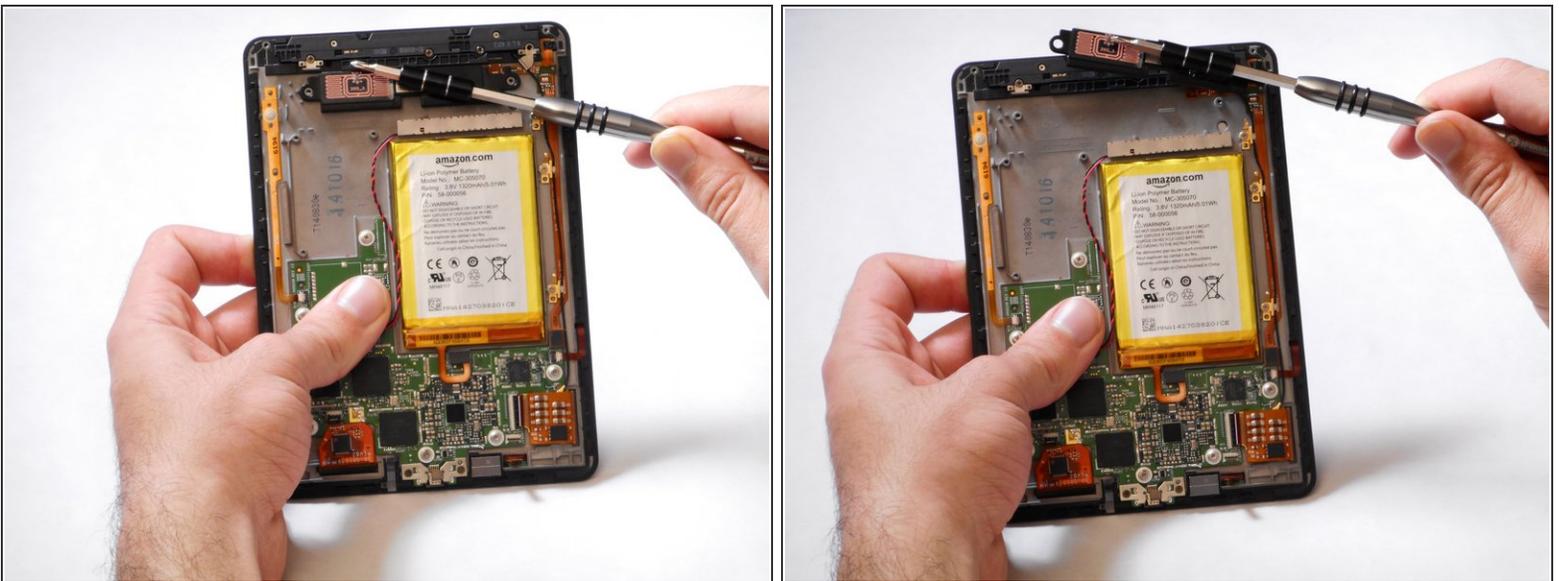
Step 2

- Use an aluminum driver attached with a Phillips head size #00 to remove the four 3mm screws shown in the picture. For reassembly, note that the top two and bottom two screws are different sizes.

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Step 3

- Once the screws are removed, the back panel can slide off the device.
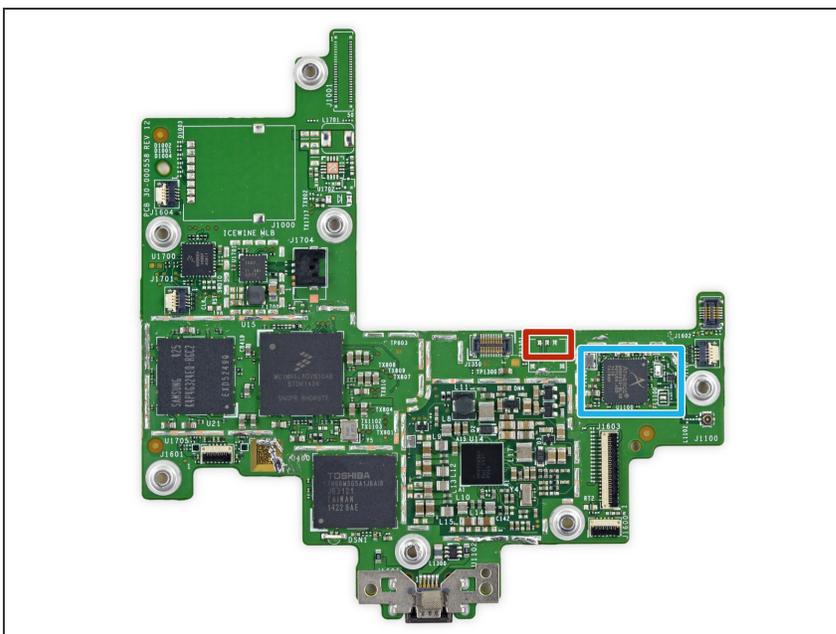
Step 4

- Remove the magnetic component with the magnetic head of the aluminum driver.

Step 5 — Remove the motherboard

- Make sure to remove all connectors, then remove all the screws.

- You should be able to remove the motherboard from the case.

- Remove the battery connector first.

## Step 6 — Solder thin wires to RX, TX, and GND

- The three wires should go on the pads outlined in red.

- From left to right, the pins are TX, RX, and GND.

- If you are finding it difficult to solder to the ground pin, try soldering to one of the shields, which would normally be where the blue outline is.

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Step 7 — Put the motherboard back

- Put the motherboard back into the Kindle, but don't re-connect the battery.

Step 8 — Build the circuit on the breadboard and connect the Kindle
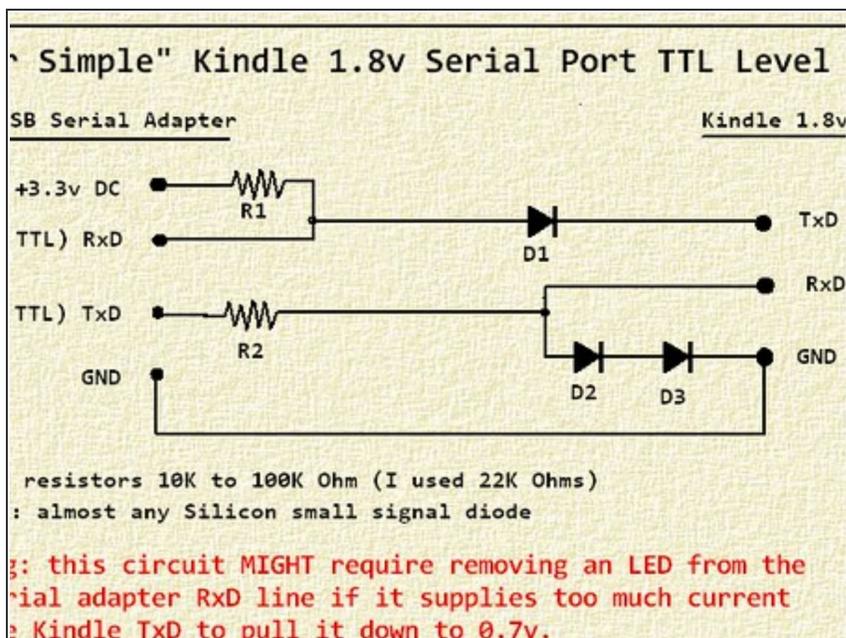
- Using the resistors, diodes, USB serial adapter, and breadboard wires, build this circuit on the breadboard.

- If you don't know how to use a breadboard, YouTube is a great place to learn.

- Sorry for the stupid cropping of the image, iFixit doesn't like it. See the full image at https://www.mobileread.com/forums/showth...

- Then, using alligator clips, connect the wires on the "kindle" side of the schematic to the appropriate wires from the Kindle.

Step 9 — Connect your computer to the kindle

- Plug your USB serial adapter into the computer.

- Start your serial terminal program (like Minicom). Make sure to disable "Hardware Flow Control".

Step 10 — Connect the Kindle battery and start diagnostic mode

- Connect the kindle battery.

- You'll start seeing text in the serial terminal. When it says "Hit any key to stop autoboot" press a key.

- Type in "bootm 0xE41000 " and press enter.

Step 11 — Upload firmware to Kindle

```
   USB device exported

   Once you are done
   Eject the USB device from the


   Battery capacity  41

(Q)-to continue

(X)-Exit
```

- Tap "U - USB Export" on the screen.

- Plug your Kindle into your computer through the Kindle's USB port.

- Download the Kindle firmware from https://www.amazon.com/gp/help/customer/...

- Open the Kindle drive on your computer and drag the .bin file into it.

- Eject your Kindle and unplug it from your computer.

- Press "Q" either onscreen or in your serial terminal.

- Tap "Reboot or Disable Diags", or type "D"

- Tap "Reboot System", or type "R"

Step 12 — Flash new firmware

```
3.0.35-lab126 #2 PREEMPT Fri Mar 22 18:08:46 UTC 2019 armv7l
Press [ENTER] for recovery menu...      3 /
Charge: 49% [##############################:::::::::::::::::::::::::::::]

Menu
====
3. Load MMC over USB storage
4. Erase MMC
I. Initialize Partition Table (fdisk) and format FAT
O. Format and overwrite FAT partition
E. Export FAT partition
U. Update using update*.bin file on FAT partition
C. Configure USB networking
N. Boot NFS over USB
Z. Boot NFS over ETH
L. List files in many directories
S. Access the shell
8. Test low level screens
D. dmesg / kernel printk ring buffer.
Q. quit
Choose:   10 /u


update-payload.dat:128 7dd72ac6a7c853a49abc313d094ec337 imx60_wario/u-boot.bin 2 bootload
1 1f2a90b898a2bf08cf3250758ba458d1 imx60_wario/uImage 22 main_kernel
128 44c3e91ba332af9a6e64aa2789971332 rootfs.img.gz 1766 update_image_rootfs

update-payload.dat:EOF

imx60_wario/u-boot.bin 293820      [####################################]
```

- The Kindle should now be booting into the regular OS.

- When the serial terminal says "Press [ENTER] for recovery menu...", press enter.

- Type "u" and quickly follow that with the enter key.

- Your kindle will restore the firmware you copied over previously.

- At the end of this process, your Kindle should be showing its bookshelf screen.

Step 13 — Put the Kindle back together

- Unplug the USB to serial adapter, and remove the wires from the kindle.

- If your wires are thin enough, you may be able to break them away from the pad, but be careful to not tear the pad off.

- If you can't do that or just want to be safe, remove the motherboard and desolder the wires, then re-install the motherboard.

To complete the repair, close the device by following the process detailed in the beginning in reverse.

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