

amazonkindle

so much more
than ebook reader

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DORS/CLUC 2012



me, year ago with new toys

Cory Doctorow: The coming war on general computation

Kindle is nice example of dumb down device.



<http://events.ccc.de/congress/2011/Fahrplan/events/4848.en.html>
<http://www.youtube.com/watch?v=HUEvRyemKSg>

Talk overview

- Why is Amazon Kindle interesting?
 - IMHO, best hackable e-book reader on market
 - GNU+Linux ARM/eInk w/ source
 - active community on mobileread forums
- What else can we install on Kindle?
 - root, usbnet, launchpad, terminal...
- kindlepdfviewer - pdf, djvu, epub...
 - great reader with wrong name
 - github collaboration for the win!
- kindlevncviewer - Kindle as 2nd screen!
- Hardware hacking: DXG with bluetooth serial
- and much more...

So, which Kindle?!

Kindle (wifi, no keyboard) OS 4

Kindle Touch (wifi, optional 3G) OS 5

Kindle Keyboard (wifi, optional 3G) OS 3

Kindle DX (only 3G) OS 2.5 (hacked OS 3)

Kindle Fire (Android, yack!)



Amazon Kindle 3 3G/GSM/WiFi 6" TEARDOWN - EEVblog #109

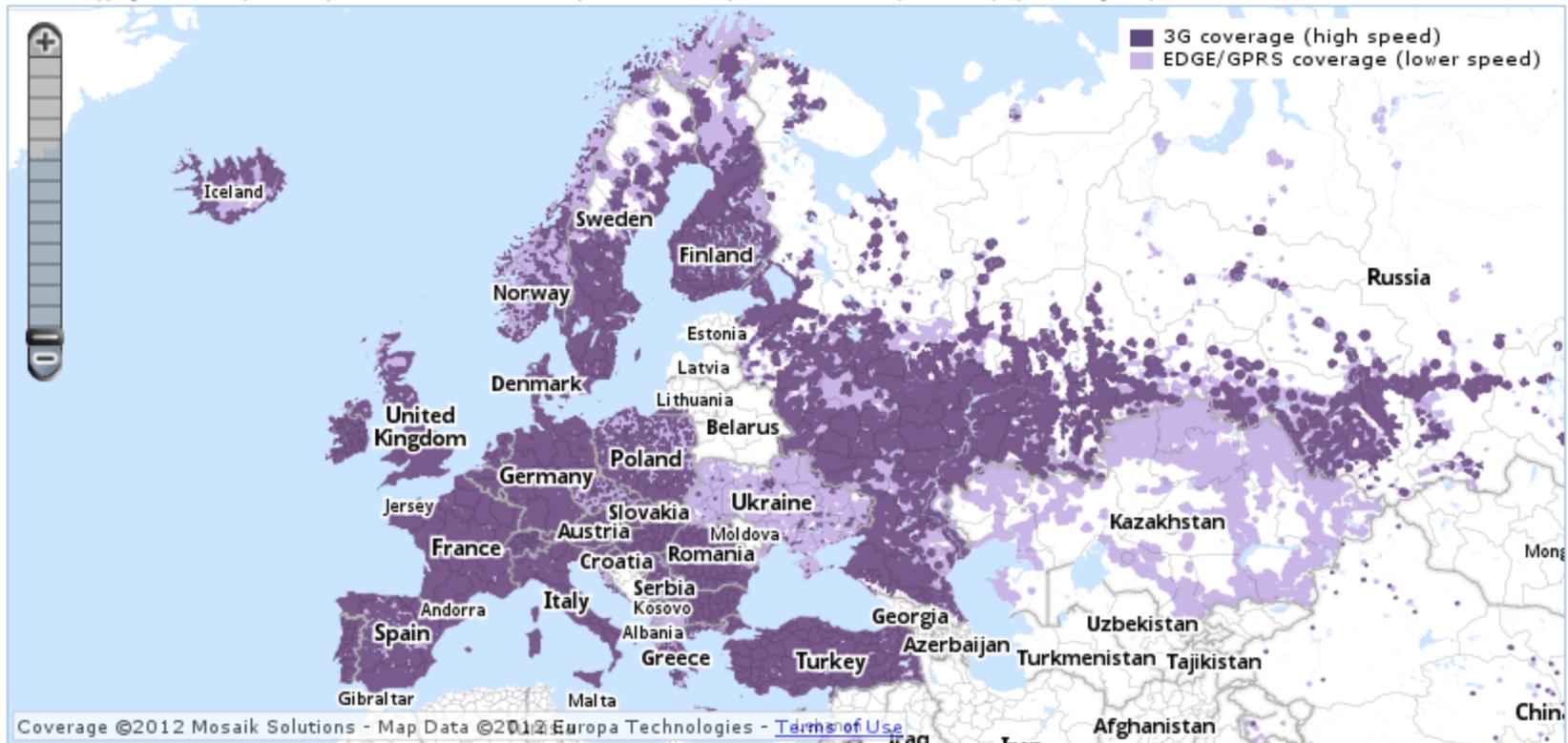


<http://youtu.be/ID-wPmowR-Y?t=4m4s>

3G Wispernet



- Web browser turns Kindle into Hitchhiker's guide to galaxy
 - Kindle phones home and sends logs back to Amazon
- <http://www.mobilerread.com/forums/showpost.php?p=1412930>



Community



[MobileRead Forums](#) > [E-Book Readers](#) > [Amazon Kindle](#) > **Kindle Developer's Corner**

<http://www.mobilerread.com/forums/forumdisplay.php?f=150>

- Liberate your Kindle <https://github.com/dpavlin/k3libre>
 - jailbreak (gain root privileges)
 - usb network (ssh over usb cable as root)
 - launchpad (start programs using keyboard shortcuts)
 - terminal (ssh, man on eInk!)
 - hints and tips for development
- Why to root your Kindle?
 - Completely safe (uses Amazon upgrade format)
 - Amazon didn't try to disable it, although they could
 - in fact, usb networking is provided by Amazon!
 - Amazon stack (store, web, TTS...) unchanged

Development for Kindle

- Amazon KDK - JavaME thingy, no invites
- Kindle is full of shell scripts
- Native applications

Kindle is nice ARMv6 device:

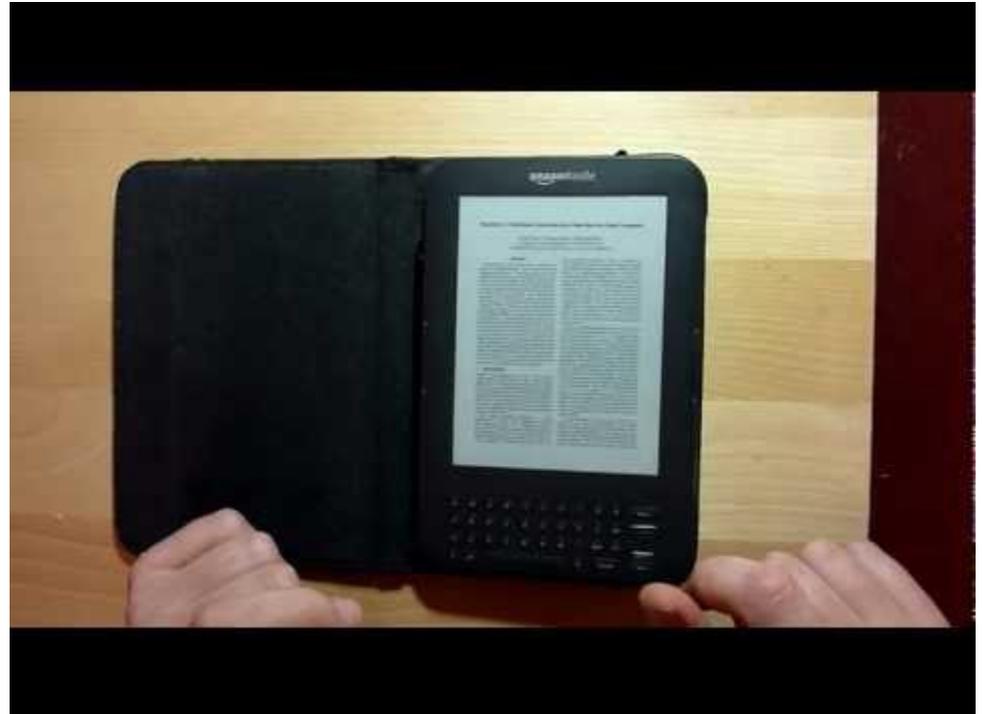
- Linux kernel 2.6.22
- e-ink frame buffer 600*800 (DXG: 824*1200)
- RAM: 256 Mb (DXG: 128 Mb)
- storage: 4Gb flash
- cross-compile for ARM (static, old glibc!)

launchpad -- yet another hotkey manager for Kindle

- SHIFT+Key shortcuts in under 0.7s (configurable!)
- SHIFT+SHIFT+Space to reload config
- SHIFT+SHIFT+I install /mnt/us/customupdates
- place config in /mnt/us/launchpad/foo.ini
- <https://github.com/dpavlin/k3libre/tree/master/launchpad>
 - prevent screen saver
 - record audio turning Kindle into dictaphone
 - re-scan document after scp over usbnet
 - rotate screen
 - change TTS speed
 - switch usbnetwork
 - start applications

kindlepdfviewer

- lua + mupdf: pdf
- djvulibre: djvu
- coolreader engine: ePub, txt, chm, fb2, html, doc...
- lua works great on small devices
- github development
- SDL emulation



<https://github.com/hwhw/kindlepdfviewer>
<http://www.mobileread.com/forums/showthread.php?t=157047>

kindlevncviewer

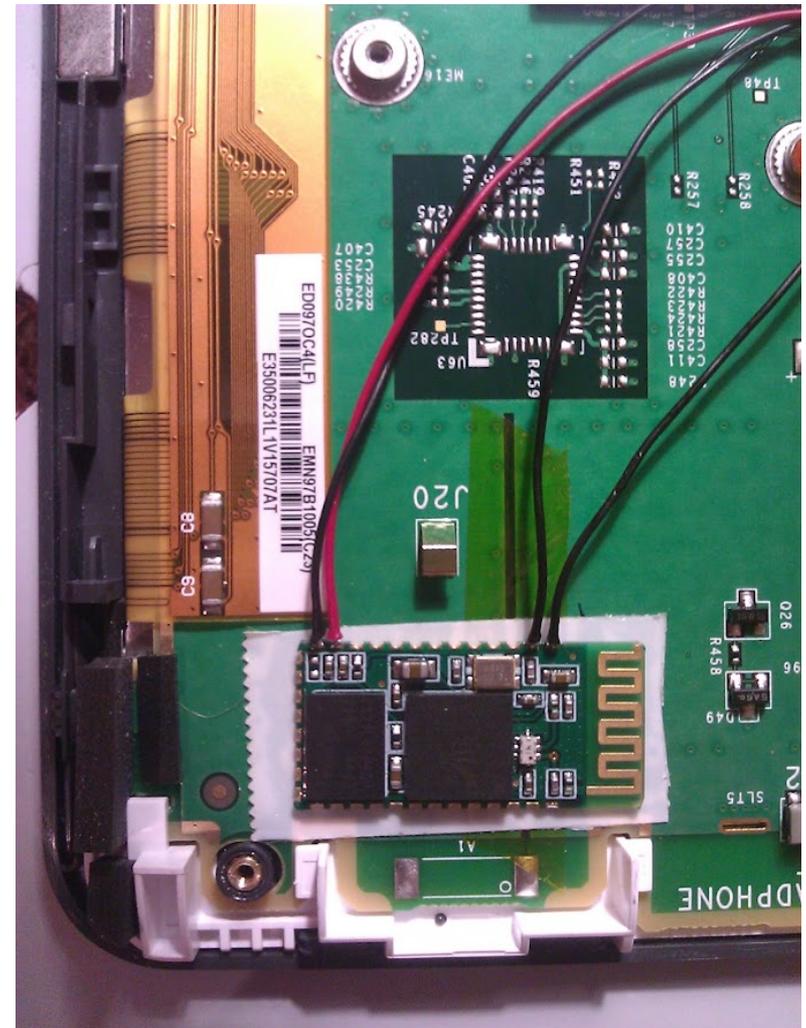
- Kindle as second display!
- lua + vnc
- Xvnc or x11vnc
- x2vnc for focus



<http://github.com/hwhw/kindlevncviewer>
<http://www.mobileread.com/forums/showthread.php?t=150434>

Adding bluetooth serial to DXG

- serial console allows access to uboot
- [Lovro](#) did great job of packing it into DXG
- this should allow me to port newer kernel
- this chip doesn't have suspend mode so it drains battery :-)



More information and questions

- My blog has Kindle related posts: <http://blog.rot13.org/projects/kindle/>
- Step by step guide to liberate Kindle:
<https://github.com/dpavlin/k3libre/blob/master/liberate-kindle.txt>
- Comprehensive List of Kindle Hacks/Modifications
<http://www.mobileread.com/forums/showthread.php?t=128704>
- List of Kindlets available (Java2ME applications)
<http://www.mobileread.com/forums/showthread.php?t=162006>
- Kindle 3 WPA Supplicant
<http://www.mobileread.com/forums/showthread.php?t=99681>
- Kindle voice packs & usertts hack
<http://www.mobileread.com/forums/showthread.php?t=153107>
- A GameBoy emulator (GPLv2: gnuvboy, ported, tested on K3)
<http://www.mobileread.com/forums/showthread.php?t=173141>
- Kindle 3.1 software for Kindle 2, 2i, & DX (under construction)
<http://www.mobileread.com/forums/showthread.php?t=127969>
- Kindle 3 Custom 3.3 kernel with kexec support and patched recovery
<http://www.mobileread.com/forums/showthread.php?t=175285>