BeagleBoard

Aprenda a utilizar e gerar aplicativos para o seu futuro netbook/celular

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Tópicos

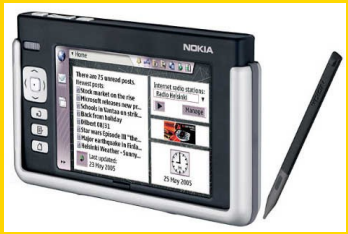
- Um futuro Netbook
- Um futuro celular / internet tablet
- OMAP3
- Beagleboard
- Processo de boot
- Distribuições
  - Maemo
  - Angstrom
  - Mamona
- Projetos
- Demonstrações e dúvidas

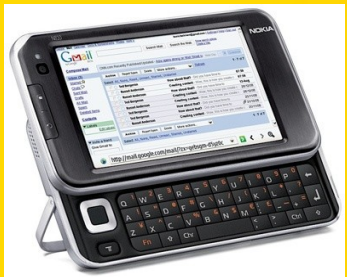
Um futuro netbook: Touch Book

- Tempo Bateria: 10-15 h
- Teclado desacoplável

Um futuro celular / internet tablet

“The 5th release will include cellular connectivity for the High Speed Packet Access (HSPA) data.”

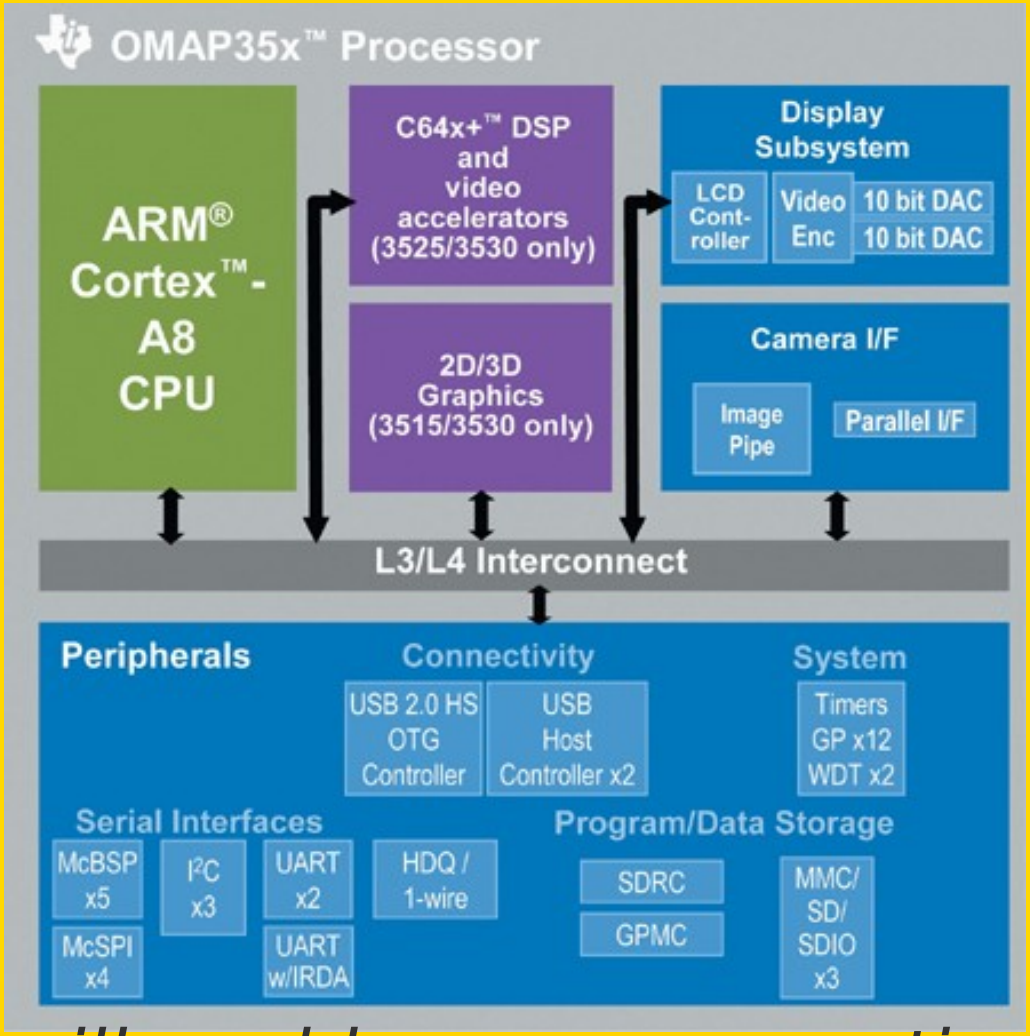




“These patches introduce initial RX-51 Internet Tablet board files and rx51_defconfig.”

O que há em comum?

Família OMAP3



"Maemo will enable more computing power by running on OMAP3 processors ."

Por que?

Quero desenvolver para estes dispositivos HOJE!

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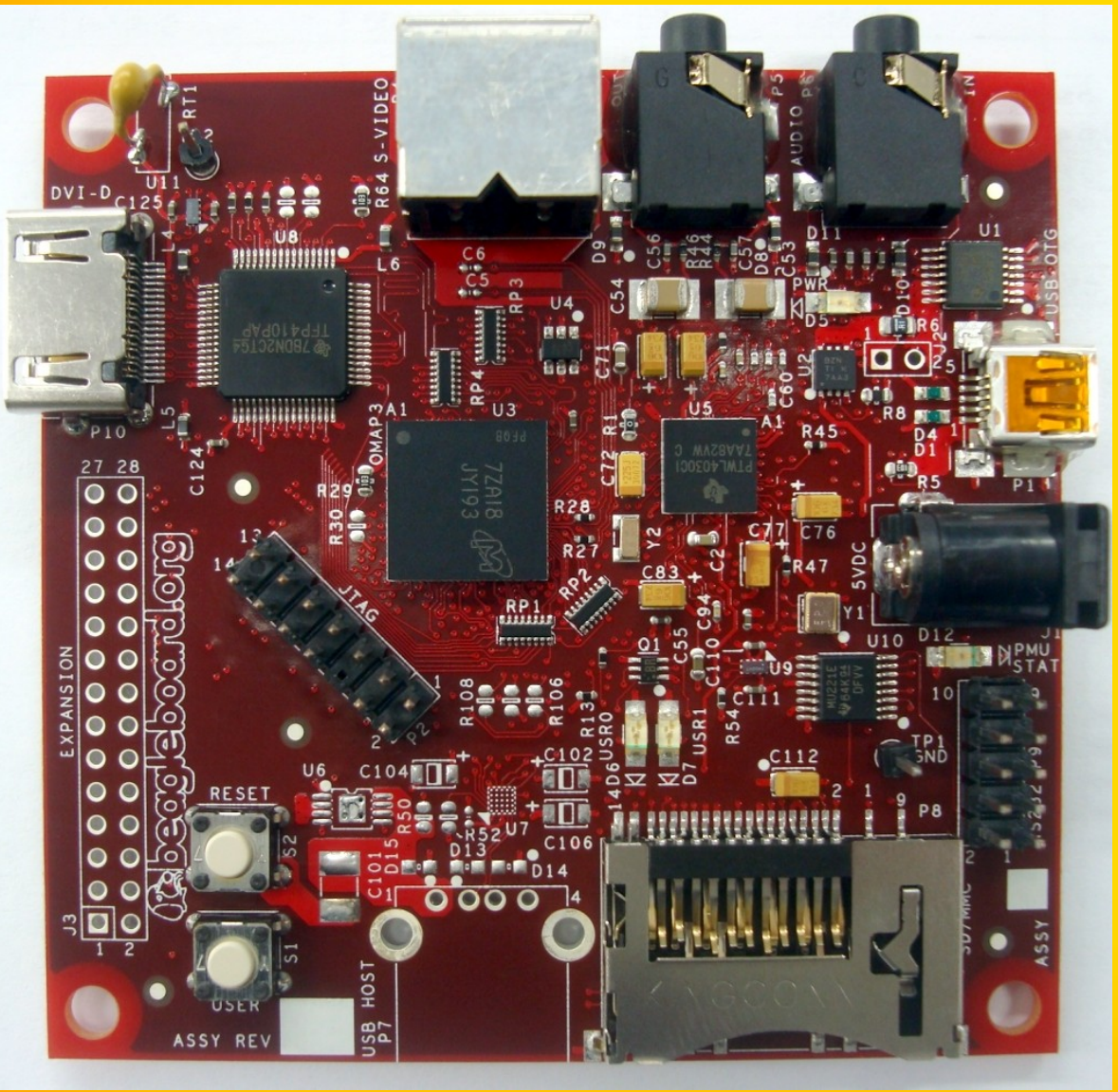
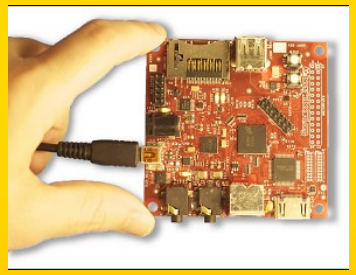
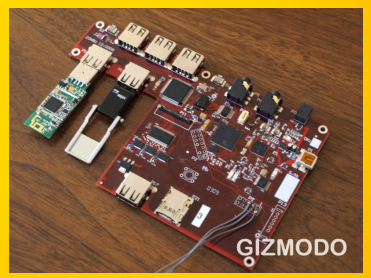


- HW baseado em OMAP3
- Baixo custo
  - $ 149
- Baixo consumo de energia
  - Máximo 2W
- http://beagleboard.org
  - Esquema de HW aberto \o/





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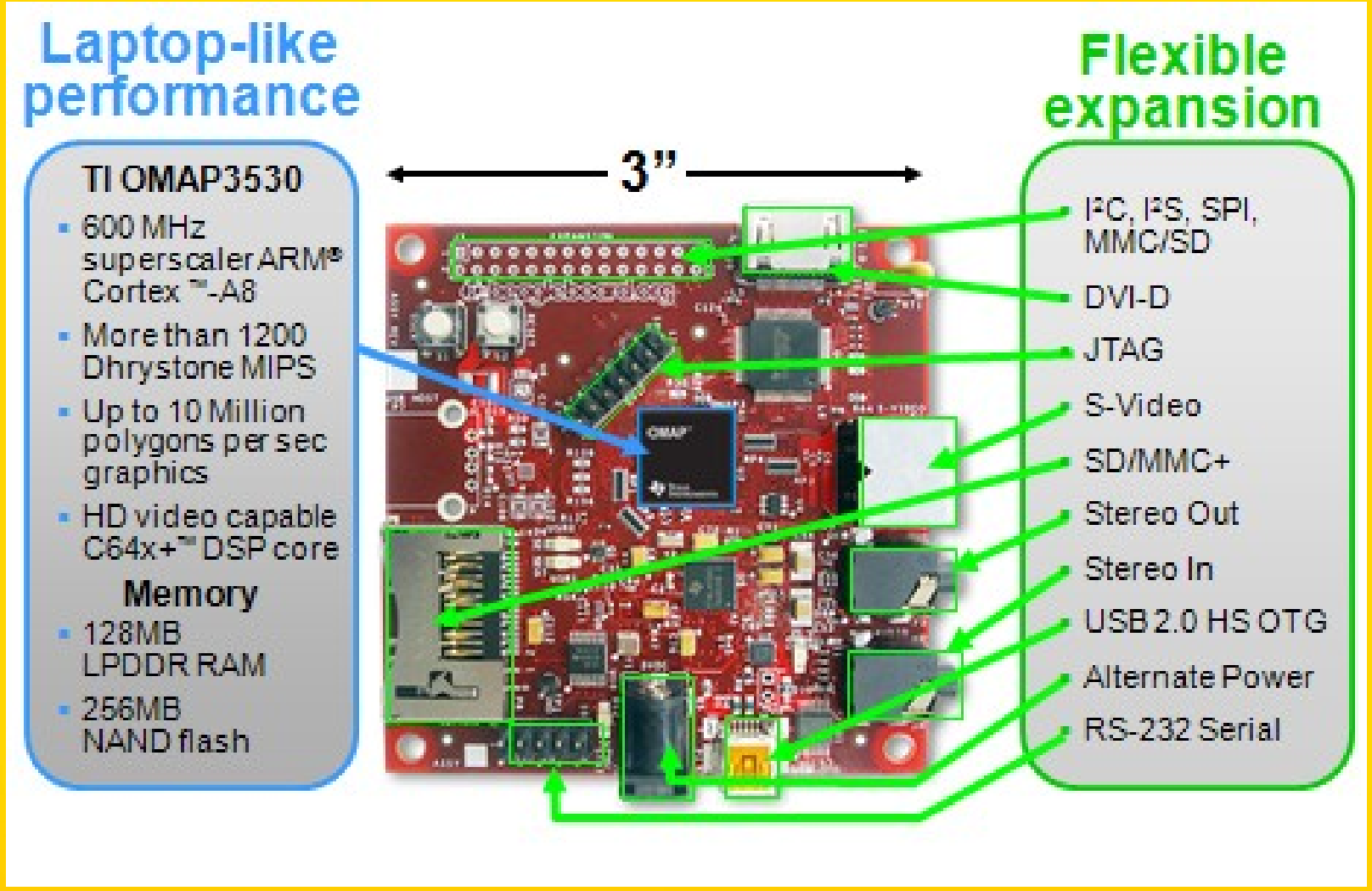
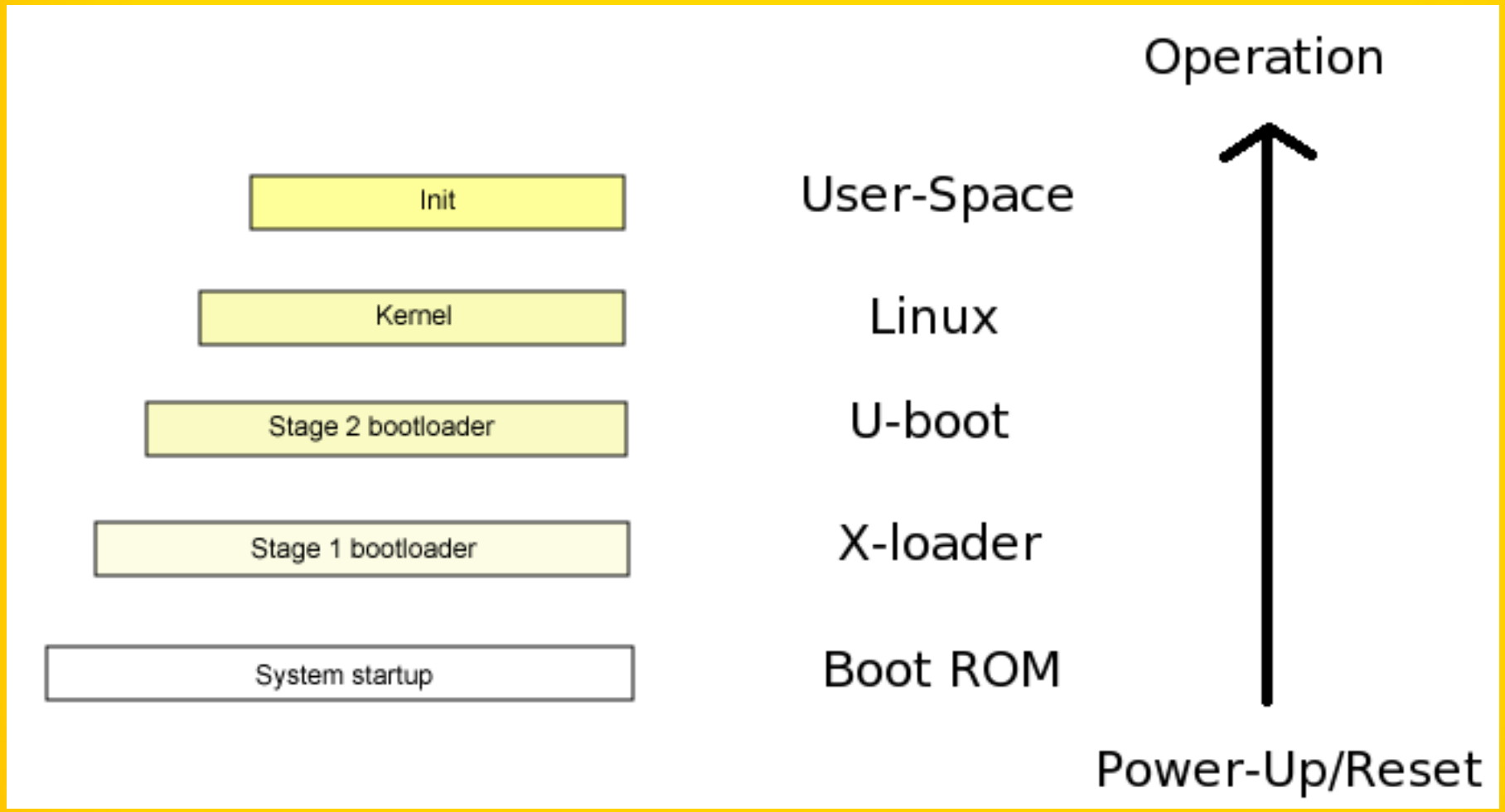
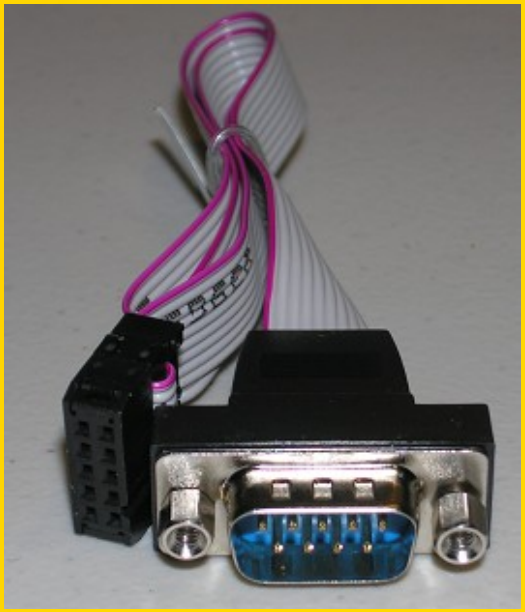


Processo de boot



U-boot: acesso via Minicom



```
A -    Serial Device      : /dev/ttyUSB0
B - Lockfile Location     : /var/lock
C -   Callin Program      :
D -  Callout Program      :
E -    Bps/Par/Bits       : 115200 8N1
F - Hardware Flow Control : No
G - Software Flow Control : No

   Change which setting?
```

```
Screen and keyboard
Save setup as dfl
Save setup as..
Exit
Exit from Minicom
```

```
[Comm Parameters]
    Current: 115200 8N1
Speed            Parity      Data
A: <next>        L: None     S: 5
B: <prev>        M: Even     T: 6
C:   9600        N: Odd      U: 7
D:  38400        O: Mark     V: 8
E: 115200        P: Space

Stopbits
W: 1             Q: 8-N-1
X: 2             R: 7-E-1

Choice, or <Enter> to exit?
```

sudo apt-get install minicom

minicom --setup

minicom

U-boot: configurando parâmetros

Texas Instruments X-Loader 1.41
Starting OS Bootloader...

U-Boot 1.3.3 (Jul 10 2008 - 16:33:09)

OMAP3530-GP rev 2, CPU-OPP2 L3-165MHz
OMAP3 Beagle Board + LPDDR/NAND
DRAM: 128 MB
NAND: 256 MiB
In: serial
Out: serial
Err: serial
Audio Tone on Speakers ... complete
Hit any key to stop autoboot: 3
OMAP3 beagleboard.org #

 # setenv bootcmd 'mmcinit;fatload mmc 0 80300000 uImage;bootm 80300000'

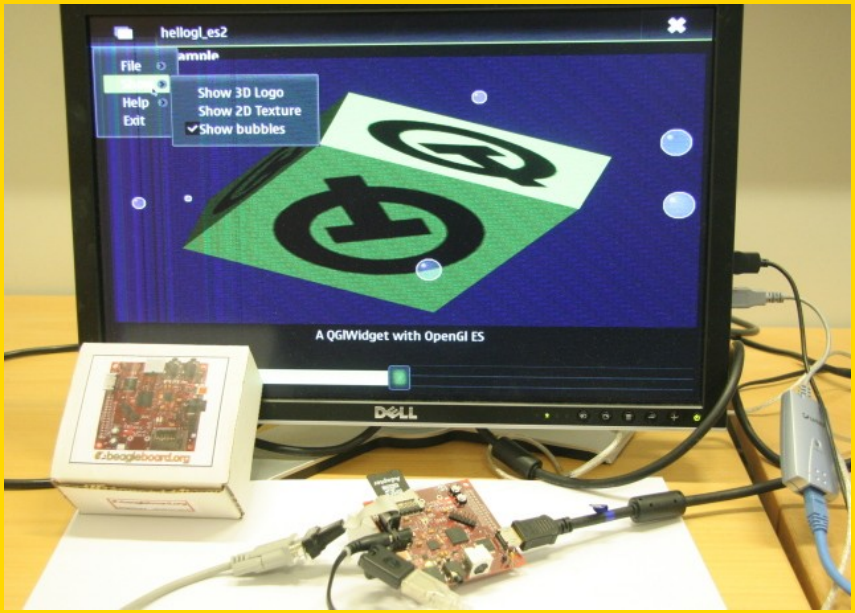
 # setenv bootargs 'console=ttyS2,115200n8 root=/dev/mmcblk0p2 rw rootwait'

 # saveenv

Kernel

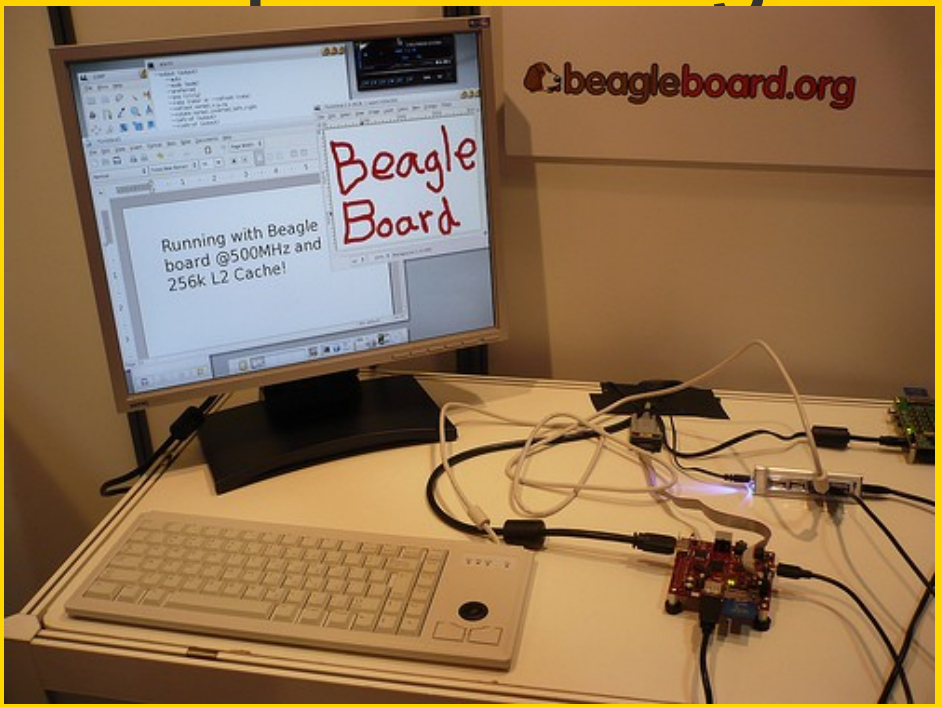
- Kernel Linux
- Onde consigo o kernel?
  - Compile o seu
    - http://git.kernel.org
    - linux-omap.git
  - Baixe um binário
    - http://code.google.com/p/beagleboard/
- Colocar no cartão
  - Primeira partição com kernel
  - Segunda partição com rootfs

User-space: Maemo



- Instalar Maemo 5 SDK Freemantle
  - http://maemo.org
- Gerar rootfs usando script make_rootfs.sh
  - http://maemo-beagle.garage.maemo.org/
- Scratchbox
- Facilidades para desenvolvedores de aplicativos

User-space: Ångström

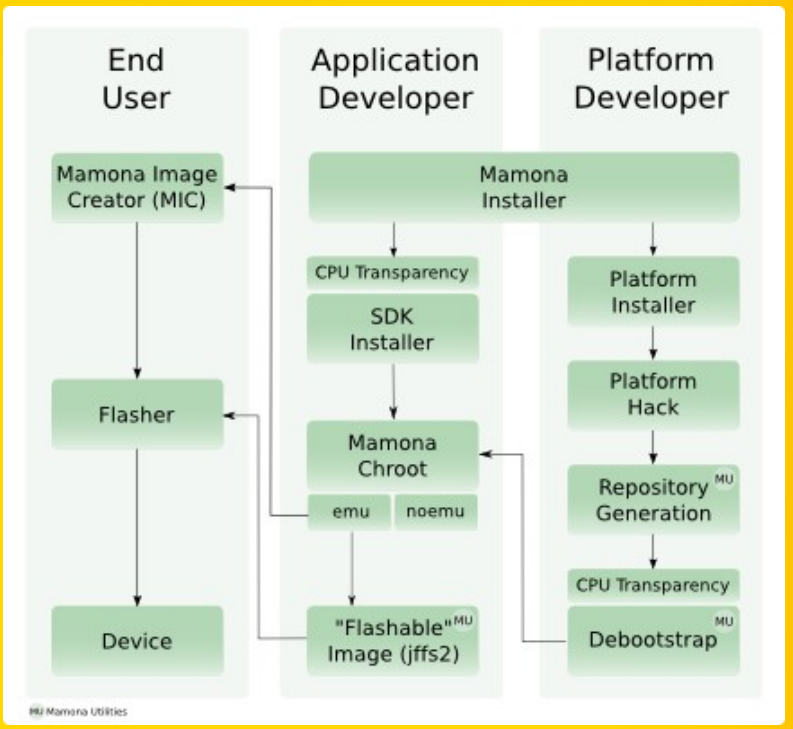


- Instalar o ambiente de build do Ångström
  - http://www.angstrom-distribution.org/
  - local.conf → build → repositorio → rootfs
- bitbake <aplicativo>
- Facilidades para desenvolvedores de plataforma

User-space: Mamona

Madhyama Pratipad

User-space: Mamona

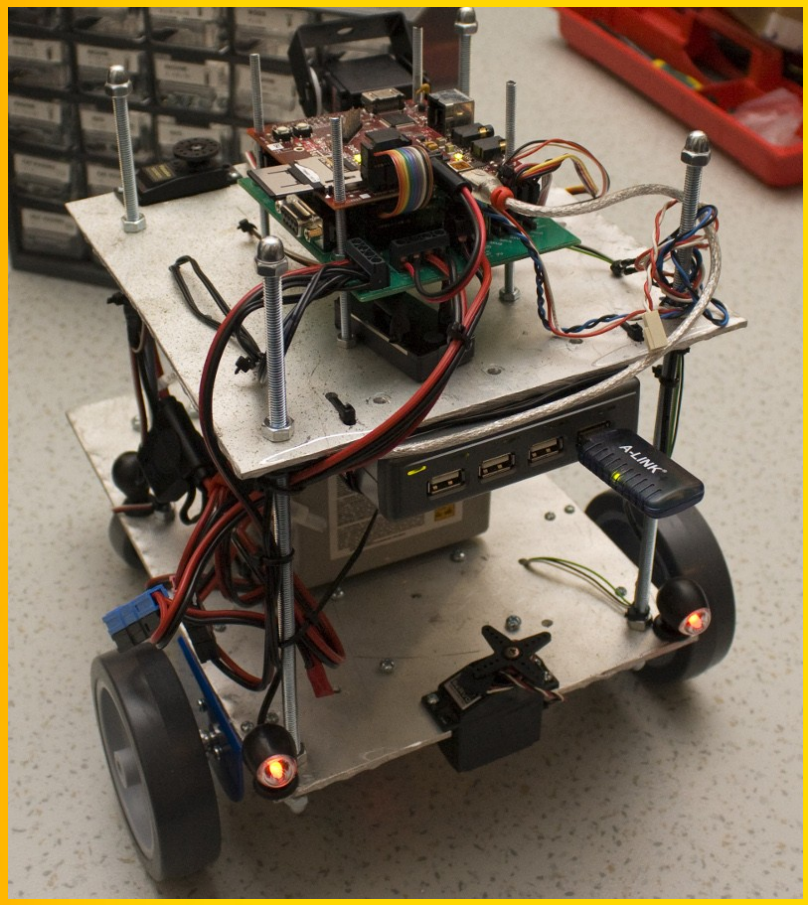


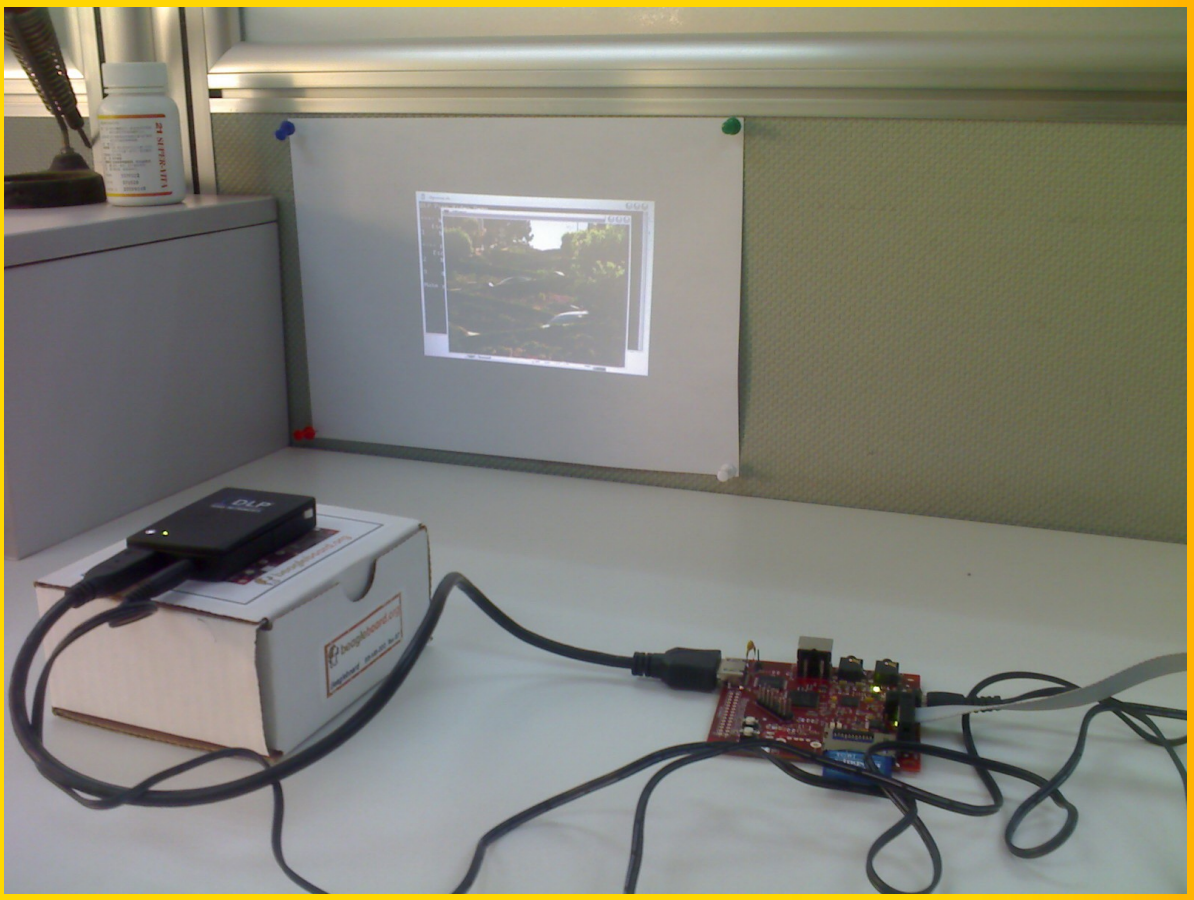
- Instalar scripts mamona-installer
  - http://dev.openbossa.org/trac/mamona/
  - Desenvolvedor de aplicativo (mamona-sdk-install)
  - Desenvolvedor de plataforma (mamona-platform-install)
- mamona-chroot <rootfs> ou bitbake <aplicativo>
- Precisa melhorar o suporte na BeagleBoard

Referencias

- http://beagleboard.org
- http://www.alwaysinnovating.com/home/index.htm
- http://jaaksi.blogspot.com/search?q=OMAP3
- http://marc.info/?l=linux-omap&m=123274496228388&w=2
- http://focus.ti.com/general/docs/wtbu/wtbuportal.tsp?templateId=6123&contentId=4646
- http://groups.google.com/group/beagleboard/msg/18b3c91e659ea206
- http://elinux.org/BeagleBoardBeginners
- http://code.google.com/p/beagleboard/wiki/LinuxBootDiskFormat
- http://maemo.org/development/sdks/maemo_5-0_installation/
- http://maemo-beagle.garage.maemo.org/alpha.html
- http://wiki.openembedded.net/index.php/Getting_Started
- http://www.angstrom-distribution.org/building-%C3%A5ngstr%C3%B6m
- http://dev.openbossa.org/trac/mamona/
- http://www.nokia-tuning.net/index.php?s=processor
- http://elinux.org/BeagleBoardBeginners

Projetos





http://beagleboard.org/project

Demonstrações e dúvidas

Obrigado

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