

TI-Android-FroYo-DevKit-V2 ReleaseNotes



TI Android FroYo DevKit V2 Release Notes

Release Notes - October 27, 2010

Introduction

This is TI's Devkit V2 release based on Android FroYo 2.2 for AM35x EVM, AM37x EVM, OMAP35x EVM, Beagleboard Rev Cx, Beagleboard XM platforms.

This release serves to provide

- Fundamental software platform to build Android based products with TI devices.
- Give Android application developer a stable integrated foundation software.
- Provide benchmark numbers to evaluate Android based solutions with other distributions on TI devices
- A single release package that comprises of all TI components (bootloader, kernel, Tools), TI differentiators (like 3D graphics based on SGX, Overlay libraries, Adobe Flash 10) and Android standard components.

Component	Version	Base Repository	Base Tag (or commit id)
OMAP Linux Kernel	2.6.32(Android Linux kernel version)	The baseline was chosen from "PSP" release from [1]	OMAPPSP_03.00.01.06_baseline
U-Boot	2010.06.rc2	[2]	OMAPPSP_03.00.02.07
Android	FroYo 2.2	http://gitorious.org/rowboat	TI-Android-FroYo-DevKit-V2.xml

The filesystem was built by integrating the sources from rowboat.org project hosted on rowboat gitorious Project [3].

The codebase for Linux kernel, SGX kernel drivers, U-Boot included in this release is also hosted at the following repositories:

Component	Repository (Branch)	Commit ID / Baseline
Bootloader	[2]	OMAPPSP_03.00.02.07
OMAP Linux Kernel	[4] (rowboat-eclair-2.6.32)	b263debb4bd3565f4550bd27cf4bb78ae44ef8c3
SGX Release	[5]	b263debb4bd3565f4550bd27cf4bb78ae44ef8c3
Adobe Flash 10	[6]	10.1.r92

For detailed information on the various software components included in the release and how to use them, please refer to the [7].

The Android sources, SGX drivers, Kernel and U-Boot have been compiled with GNU Toolchain for ARM Processors from Android pre-built package [8]

Documentation

The User Guide provides instructions on how to use the TI's Android FroYo DevKit package. A copy of the User Guide is included in the docs folder of the DevKit package.

The User Guide also gives instructions on building the Android root filesystem using Android sources maintained on rowboat repositories.

What's Supported

This SDK package includes support for the OMAP35x EVM, AM35x EVM, AM37x EVM, Beagleboard Rev Cx, Beagleboard XM.

Software features/components supported in this DevKit are

- Android Linux Kernel 2.6.32 integrated with PSP (03.00.01.06) drivers
 - Bootloader (u-boot) and x-loader
 - SGX Open GL Driver & Libraries
 - Adobe Flash 10
 - Android FroYo 2.2 release from Google Android
 - Example Applications and Demos
 - Desk Clock, Browser, Calendar, Calculator, Contacts, Gallery, GlobalSearch, Launcher, Music, Settings
 - 3D Graphics - OpenGL ES demos.
 - Documentation
 - User Guide
 - Release Notes
 - CTS report
 - RowboPERF (Performance measurement) application user guide
 - Software Manifest
 - Filesystem Manifest
 - Host Tools
 - Flash Tool
 - Pin Mux Utility
 - SignGP
 - Debugging
 - ADB over USB
 - ADB over Ethernet
 - ADB over Ethernet through USB
 - Connecting Eclipse (as provided by Android) with the EVMs, Beagleboards
 - Test and Performance Reports
 - CTS
 - Performance, benchmarking results
 - Test results from our validation
-

Complete directory structure of DevKit

```

TI_Android_FroYo_DevKit-V2
|-- Android_Source_Manifest
|   |-- TI-Android-FroYo-DevKit-V2.xml
|-- Documents
|   |-- RowboPERF_User_Guide.pdf
|   |-- Software_Manifests
|       |-- TI-Android-DevKit-FS-Manifest.doc
|       |-- TI-Android-DevKit-Manifest-For-TSU-components.doc
|           |-- TI-Android-DevKit-Software-Manifest.doc
|-- Test_Performance_Results
|   |-- CTS_Report.tar.gz
|   |-- Performance_Results.pdf
|   |-- `-- Test_Results.pdf
|-- TI-Android-FroYo-DevKit-V2_ReleaseNotes.pdf
|-- `-- TI-Android-FroYo-DevKit-V2_UserGuide.pdf
|-- OMAP35x_Android_SGX_SDK.tar.gz
|-- Performance_Apps
|   |-- 0xbench
|   |   |-- armeabi
|   |   |-- `-- Benchmark-release.apk
|   |-- 3D
|   |   |-- libPVRShell_ChameleonMan.so
|   |   |-- libPVRShell_Coverflow.so
|   |   |-- libPVRShell_Shaders.so
|   |   |-- libPVRShell_Vase.so
|   |   |-- OGLS2ChameleonMan-release.apk
|   |   |-- OGLS2Coverflow-release.apk
|   |   |-- OGLS2Shaders-release.apk
|   |   |-- `-- OGLSVase-release.apk
|   |-- install_rowboperf.sh
|   |-- Launcher2
|   |   |-- `-- Launcher2.apk
|   |-- rowboatBench
|   |   |-- `-- rowboat.benchmark.runner-debug.apk
|   |-- RowboPERF
|   |   |-- bin
|   |   |-- `-- RowboPERF.apk
|   |-- RowboPERF_User_Guide.pdf
|   |-- `-- StorageIO
|       |-- `-- StorageIO.apk
|-- Prebuilt_Images
|   |-- AM35X
|   |   |-- Boot_Images
|   |   |-- Filesystem
|   |   |-- Media_Clips
|   |   |-- mkmmc-android.sh

```

```
| | `-- README.txt
| |-- AM37X
| | |-- Boot_Images
| | |-- Filesystem
| | |-- Media_Clips
| | |-- mkmmc-android.sh
| | `-- README.txt
| |-- beagleboard-rev-c4
| | |-- Boot_Images
| | |-- Filesystem
| | |-- Media_Clips
| | |-- mkmmc-android.sh
| | `-- README.txt
| |-- beagleboard-xm
| | |-- Boot_Images
| | |-- Filesystem
| | |-- Media_Clips
| | |-- mkmmc-android.sh
| | `-- README.txt
| `-- OMAP35X
|     |-- Boot_Images
|     |-- Filesystem
|     |-- Media_Clips
|     |-- mkmmc-android.sh
|     `-- README.txt
|-- Sources
| |-- Android_Linux_Kernel_2_6_32.tar.gz
| |-- u-boot-03.00.02.07.tar.gz
| `-- x-loader-03.00.02.07.tar.gz
`-- Tools
    |-- flash-utility.tar.gz
    |-- mk-bootscr
    | |-- mkbootscr
    | |-- mkimage
    | `-- README
    |-- mk-mmc
    | |-- mkmmc-android.sh
    | `-- README
    |-- pinmux-utility.tar.gz
    `-- signGP
        |-- signGP
        `-- signGP.c
```

What's Not Supported

- The following items are not supported:
 - U-boot (Unified binary supporting Nand/OneNand on OMAP35x platform)
 - AM/DM37x Processor card with Micron Memory
 - Power Management
 - WLAN, Bluetooth connectivity
 - Camera
 - Fastboot
 - Dynamic rotation of display

New in this Release

- The following items are newly added in this release:
 - Android FroYo release
 - Adobe Flash 10
 - USB Mass Storage
 - Audio Record feature in Android
 - Performance measurements using RowboPERF, 0xbench and rowboatbench
 - Media clips for Audio, Video and JPEG
 - Keypad support on AM35x EVM

Known Issues

Component	Issue Description	Workaround	Comments
Hardware	USB EHCI Host port doesn't work on few AM37x EVMs	NONE	No fix available currently, suggestion is to try the same with Beagleboard XM.
Software	Pinmux Utility: could not resize the GUI, so could not see what the other button on the bottom right corner is.	User may need to adjust the display resolution of their Windows PC	To be fixed in future releases
Software	Pinmux utility requires Left-click to select a peripheral interface cell. The cell should be auto selected when user right-click it.	No impact to functionality. Just a note on the user interface.	To be fixed in future releases

Installation and Usage

The DevKit release is maintained as a single "TI_Android_FroYo_DevKit-V2.tar.gz" at http://software-dl.ti.com/dsps/dsps_public_sw/sdo_tii/TI_Android_DevKit/02_00_00/index_FDS.html and individual component packages.

On a Linux Host PC download the single release package and execute the following components

```
#> tar -xzf TI_Android_FroYo_DevKit-V2.tar.gz
```

Please refer to the TI Android FroYo DevKit User Guide ^[7] for more information on how to install and use the DevKit

Other individual packages can be used to refer to respective components.

The md5 checksums are provided for users to double check or verify the completeness of downloaded package.

Device Support

This release supports the following Texas Instruments devices

- OMAP35x, AM35x, AM37x

This release supports the following platforms

- Texas Instruments AM37x EVM (on the Mistral Rev G AM3715EVM)
- Texas Instruments AM35x EVM
- Texas Instruments OMAP35x EVM (on the Mistral Rev G OMAP35x)
- Beagleboard Rev Cx
- Beagleboard XM

Versioning

This is Release DevKit-V2 The release is available from http://software-dl.ti.com/dsps/dsps_public_sw/sdo_tii/TI_Android_DevKit/02_00_00/index_FDS.html

Technical Support and Product Updates

For further information or to report any problems, contact <http://e2e.ti.com> "Android" or <http://support.ti.com>.

For community support join <http://groups.google.com/group/rowboat>

For IRC #rowboat on irc.freenode.net

To raise any defect for this release please use <http://code.google.com/p/rowboat/issues/list>

References

- [1] <http://arago-project.org/git/projects/linux-omap3.git>
 - [2] <http://arago-project.org/git/projects/u-boot-omap3.git>
 - [3] <http://gitorious.org/rowboat>
 - [4] <http://gitorious.org/rowboat/kernel>
 - [5] http://git.gitorious.org/rowboat/ti_android_sgx_sdk.git
 - [6] <http://focus.ti.com/docs/toolsw/folders/print/adobe-flash-a8.html>
 - [7] http://processors.wiki.ti.com/index.php/TI-Android-FroYo-DevKit-V2_UserGuide
 - [8] <http://gitorious.org/rowboat/prebuilt/trees/rowboat-froyo/linux-x86/toolchain/arm-eabi-4.4.0>
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