

TI-Android-GingerBread-2.3-DevKit-2.0 ReleaseNotes



TI Android GingerBread 2.3 DevKit 2.0 Release Notes

Release Notes - April 30, 2011

NOTE: This document is applicable for Android on AM38xx/TI81xx devices.

The TI Android Development Kit for DM3730, AM37x and AM35x devices can be downloaded from <http://focus.ti.com/docs/toolsw/folders/print/androidsdk-sitara.html>

Introduction

This is TI-Android-GingerBread-2.3-DevKit-2.0 release based on Android GingerBread 2.3 for AM38xx/TI81xx 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
 - Sources (Linux kernel, Boot loader, Android 2.3 distribution and test/sample apps)
 - Debug and Development tools (CCSv5 and Android plugins)
 - Documentation (Developers guide, user guide and release notes)
 - Test reports (CTS report, Test results, Performance and benchmarking)
 - Pre-built images for Out of the box demo and evaluation
 - Plugins (Adobe Flash 10.2)

Software components in release

This Android distribution / release is built by integrating the sources from arowboat.org project hosted on <http://gitorious.org/rowboat>. The sources can be obtained by following the instructions provided in developers guide using TI-Android-GingerBread-2.3-DevKit-2.0.xml Android manifest file.

The code base for Linux kernel, Open GL 3D graphics acceleration drivers (SGX), U-Boot, syslink, IPC, HDVPSS drivers included in this release is also hosted at the following repositories:

Component	Repository (Branch)	Commit ID / Baseline
Bootloader	[1] (ti81xx-master)	90fb5f4f4b992b6b93fe6d3619a2b8564cfe934b
TI81XX Linux Kernel	[2] (rowboat-ti81xx-2.6.37)	a3643b9f58bd88bcef983ae6e9ca4910c40da47a
SGX Release	[3] (ti_sgx_sdk-ddk_1.7)	1516ec18768a403ea2aa25370794ca02576b0280
Adobe Flash 10	[4]	v10.1.r105
syslink, IPC, HDVPSS	[5]	5535e5173313bf5ef99a7f63914c081ac2344801

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

http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3-DevKit-2.0_UserGuide.

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

<http://gitorious.org/rowboat/prebuilt/trees/rowboat-froyo/linux-x86/toolchain/arm-eabi-4.4.0>

Base line of software components

The following TI components are ported to Android distribution to build this Android release.

Component	Version	Base Repository	Base Tag (or commit id)
TI81xx Linux Kernel	2.6.37(Linux kernel version)	The baseline was chosen from "PSP" release from [6]	v2.6.37_TI816XPSP_04.00.00.10
U-Boot	v2010.06	[7]	v2010.06_TI816XPSP_04.00.00.10
Android	GingerBread 2.3	http://gitorious.org/rowboat	TI-Android-GingerBread-2.3-DevKit-2.0.xml (without multimedia DSP acceleration),
Syslink	02_00_00_67_alpha2	-	-
HDVPSS drivers	REL.HDVPSS.01.00.01.26	-	-
IPC	1_22_03_23	-	-
Open GL ES 3D acceleration (SGX)	4.03.01.00 based on 1.7 DDK	-	-

Documentation

• User guide

Provides instructions on how to use the TI Android GingerBread 2.3 DevKit 2.0 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.

Location : http://processors.wiki.ti.com/index.php/TI_Android_GingerBread_2.3_DevKit_2.0_UserGuide

• Developer guide

Provides instructions for Android developers to get access to Android sources for TI devices, setting up host environment for compilation and enabling debug environment to ease the app development, debugging and deployment. [edit]

Location : http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3-DevKit-2.0_DeveloperGuide

• Performance guide

Gives the benchmark numbers for various parameters and peripherals

Location : http://processors.wiki.ti.com/index.php/Android_Benchmarks_DevKit2.3v2.0

What's Supported

This release package includes support for the AM38xx/TI81xx platforms

Software features/components supported in this DevKit are

- Android GingerBread 2.3 release from Google Android
 - Android Linux Kernel 2.6.37 integrated with PSP (04.00.00.10) drivers
 - Bootloader (u-boot)
 - SGX Open GL Drivers
 - Adobe Flash 10.2 plugin for Android (upon approval)
 - 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
 - Developer Guide
 - CTS reports
 - RowboPERF (Performance measurement) application user guide
 - Software Manifest files
 - Host Tools for development and debugging
 - Android debugging with ADB
 - ADB Debugging over Ethernet
 - CCSv5 based Android debugging
 - Connecting Eclipse (as provided by Android) with the EVMs
 - Test and Performance Reports
 - Performance, benchmarking results
 - Test results from our validation
 - Hardware features supported
 - HDMI (1080p) display
 - Component out (1080p) display
 - Gigabit Ethernet
 - Audio In/Out
 - USB mouse and keyboard
 - SD/MMC boot
 - SATA
 - PCIe
 - DDR3
-

Package Content

```

TI_Android_GingerBread_2.3_DevKit_2.0
|-- Android_Source_Manifest
|   `-- TI-Android-GingerBread-2.3-DevKit-2.0.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
|   |   |-- PerformanceResult.pdf
|   |   `-- Test_Report.tar.gz
|   |-- TI-Android-GingerBread-2.3-DevKit-2.0_DeveloperGuide.pdf
|   |-- TI-Android-GingerBread-2.3-DevKit-2.0_ReleaseNotes.pdf
|   `-- TI_Android_GingerBread_2.3_DevKit_2.0_UserGuide.pdf
|-- Performance_Apps
|   |-- 0xbench
|   |-- 3D
|   |-- install_rowboperf.sh
|   |-- Launcher2
|   |-- rowboatBench
|   |-- RowboPERF
|   |-- RowboPERF_User_Guide.pdf
|   `-- StorageIO
|-- Prebuilt_Images
|   `-- AM389X_TI816X
`-- Tools
    |-- android-sdk_r06-linux_86.tgz
    |-- mk-bootscr
    `-- mk-mmc

```

Installation and Usage

The Android DevKit release provides

- Sources & Tools : For Android developers
- Pre-built images : For Out of the box demo and Android evaluation

Sources

TI provides Android sources for all the supported devices in multiple locations, developers can download the sources from the [gitorious.org/rowboat](https://github.com/rowboat) repository or use the pre-packaged repo in the DevKit.

Using gitorious.org/rowboat

The following commands help developers to clone sources from Gitorious.org/rowboat repository

```
$ mkdir rowboat-android
$ cd rowboat-android
$ repo init -u git://gitorious.org/rowboat/manifest.git -m
TI-Android-GingerBread-2.3-DevKit-2.0.xml
$ repo sync
```

Using pre-packaged repo

The above method is ideal but is time consuming, so developers can use the pre-packaged Android sources in DevKit package.

NOTE: Once the sources are generated developers can do a “repo sync” to pull latest updates (if any) from gitorious.org/rowboat

```
$ mkdir rowboat-android
$ cd rowboat-android
$ Download the pre-packaged repo from http://software-dl.ti.com/
dsps/dsps_public_sw/sdo_tii/TI_Android_DevKit/
TI_Android_GingerBread_2_3_DevKit_2_0/index_FDS.html
$ tar -xvzf TI_Android_GingerBread_2.3_DevKit_2.0_Sources.tar.bz
$ cd TI_Android_GingerBread_2.3_DevKit_2.0_Sources
$ ./repo/repo/repo sync --local-only
```

This will generate the sources for

- Android File system
- Android Linux Kernel (in kernel directory)
- u-boot boot loader (in u-boot-omap3 directory)
- Toolchain (prebuilt/linux-x86/toolchain/arm-eabi-4.4.0/bin)

Pre-built Images

The pre-built images can be used for Android evaluation and out of the box experience. The pre-built images are maintained as

- Separate EVM image for AM38xx device
- A combo package "TI_Android_GingerBread_2.3_DevKit_2.0" with tools, documentation and pre-built images

Refer to release page: [http:// software-dl. ti. com/ dsps/ dsps_public_sw/ sdo_tii/ TI_Android_DevKit/ TI_Android_GingerBread_2_3_DevKit_2_0/index_FDS.html](http://software-dl.ti.com/dsps/dsps_public_sw/sdo_tii/TI_Android_DevKit/TI_Android_GingerBread_2_3_DevKit_2_0/index_FDS.html)

Please refer to the User Guide ^[8] for more information on how to install and use the DevKit for out of the box demos and evaluation

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

Device Support

This release supports the following platforms

- Texas Instruments AM389x/TI816x EVM

Known Issues

Component	Issue Description	Workaround	Comments
Hardware	USB is not getting detected on AM389x/TI816X	Press reset pin for 2 sec and reboot the board	
Software	Touch screen on Touch Screen LCD Monitor is not working	No workaround	To be fixed in future release
Software	Display out of range problem on Touch Screen LCD Monitor and TV with HDMI output.	Connect LCD TV and set it to screen fit mode	
Software	Power Management is not working	No workaround	Not supported by Linux BSP
Software	UBIFS is not working	No workaround	To be fixed in next release

Version

This is Release TI Android GingerBread 2.3 DevKit 2.0

The release is available from http://software-dl.ti.com/dsps/dsps_public_sw/sdo_tii/TI_Android_DevKit/TI_Android_GingerBread_2_3_DevKit_2_0/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://gitorious.org/rowboat/u-boot-omap3>
- [2] <http://gitorious.org/rowboat/kernel>
- [3] <http://gitorious.org/rowboat/hardware-ti-sgx.git>
- [4] <http://focus.ti.com/docs/toolsw/folders/print/adobe-flash-a8.html>
- [5] <http://gitorious.org/rowboat/hardware-ti-ti81xx>
- [6] <http://arago-project.org/git/people/?p=sriram/ti-psp-omap.git;a=summary>
- [7] <http://arago-project.org/git/projects/?p=u-boot-omap3.git;a=summary>
- [8] http://processors.wiki.ti.com/index.php/TI_Android_GingerBread_2.3_DevKit_2.0_UserGuide

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