

# TI-Android-GingerBread-2.3.4-DevKit-2.1 ReleaseNotes



## TI Android GingerBread 2.3.4 DevKit 2.1 Release Notes

Release Notes - July 11, 2011

### Introduction

This is TI-Android-GingerBread-2.3.4-DevKit-2.1 release based on Android GingerBread 2.3.4 for AM35x EVM, AM37x EVM, Beagleboard Rev Cx and Beagleboard XM Rev A/B/C 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 10.3) and Android standard components.

See below table to find information on various individual components

Component	Version	Repository (Branch)	Commit ID / Baseline	Base Repository	Base Tag
Bootloader	2010.06	[1]	a0a135ae3659791b830530e81628c538ef783bab	[2]	DEV_OMAPPSP_04.02.00.07
OMAP Linux Kernel	2.6.37	[3] (rowboat-gingerbread-2.6.37)	df41eac5b4bd3c976a73c5e08a2bf4f8d93466ea	[4]	DEV_OMAPPSP_04.02.00.07
SGX Release	ddk 1.7	[5]	3c2314a9fe811f7ac074608c5c0a214c49a22f8c	None	None
Adobe Flash 10	10.3	[6]	v10.3.r185	None	None
Android Filesystem	GingerBread 2.3.4	<a href="http://gitorious.org/rowboat">http://gitorious.org/rowboat</a>	TI-Android-GingerBread-2.3.4-DevKit-2.1.xml	<a href="http://android.git.kernel.org/platform/manifest.git">git://android.git.kernel.org/platform/manifest.git</a>	android-2.3.4_r1

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-2.3.4-DevKit-2.1\\_UserGuide](http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3.4-DevKit-2.1_UserGuide).

The Android sources, 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-4.4.3>

The SGX drivers have been compiled with GNU Toolchain version 4.4.0 for ARM Processors from Android pre-built package

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

## Documentation

Document Name	Description	Location
User Guide	Provides instructions on how to use the TI Android GingerBread 2.3.4 DevKit 2.1 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.	[7]
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.	[8]
Performance Guide	Gives the benchmark numbers for various parameters and peripherals	[9]
Porting Guide	Provides information on porting packages like WLAN/BT, Camera, PowerManagement, NAND UBIFS for other platforms	[10]

## What's Supported

### Device Support

This release supports the following Texas Instruments devices

- AM35x, AM37x

This release supports the following platforms

- Texas Instruments AM37x EVM (on the Mistral Rev G AM3715EVM)
- Texas Instruments AM35x EVM
- Beagleboard Rev Cx
- Beagleboard XM Rev A/B/C

### Software components supported in this DevKit are

- Android GingerBread 2.3.4 release from Google Android
- Android Linux Kernel 2.6.37 integrated with PSP (04.02.00.07) drivers
- Android GCC toolchain 4.4.3
- Bootloader (u-boot) and x-loader
- SGX OpenGL ES Driver & Libraries DDK v1.7
- Adobe Flash 10 (upon approval)
- WLAN and Bluetooth Firmware and Compat Drivers for TI's WL1271
- Built-in Applications and Demos
  - Browser, Calculator, Camera, Clock, Contacts, Custom Locale, Music, Search, Spare parts (developer apps)
  - Dev Tools, Downloads, Gallery, IMEs for Japanese, Chinese, and Latin text inputs, Speech recorder
  - 3D Graphics - OpenGL ES demos.
- Peripherals drivers
  - NAND (UBIFS), USB, LCD, DVI, Svideo, Keypad, Touch, Camera (AM37x/BeagleXM)
  - MMC/SD, UART, Ethernet, Audio out/in, WLAN, Bluetooth (HFP, HSP, AVRCP, A2DP, OPP)
- Documentation

- User Guide
- Release Notes
- Developer Guide
- Porting Guide
- RowboPERF (Performance measurement) application user guide
- Software Manifest files
- Host Tools
  - NAND Flashing Tool
  - Pin Mux Utility
  - SignGP (to sign x-loader)
- Android Debugging
  - ADB Debugging over USB, Ethernet and Ethernet over USB
  - TI's CCSv5 using Android ADT plugins
- Test and Performance Reports
  - Performance, benchmarking results
  - Test results from our validation
  - Google Android's Compatibility Test Suite (CTS) report

### Complete directory structure of DevKit

```

TI_Android_GingerBread_2_3_4_DevKit_2_1
|-- Android_Source_Manifest
|   `-- TI-Android-GingerBread-2.3.4-DevKit-2.1.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
|   |-- TI-Android-GingerBread-2.3.4-DevKit-2.1_DeveloperGuide.pdf
|   |-- TI-Android-GingerBread-2.3.4-DevKit-2.1_ReleaseNotes.pdf
|   |-- TI-Android-GingerBread-2.3.4-DevKit-2.1_UserGuide.pdf
|   `-- Test_Performance_Results
|       |-- CTS_Report.tar.gz
|       `-- TestResults
|           |-- AM3517_Gingerbread_2.3.4_Devkit_2.1_Test_Report.pdf
|           `-- AM37x_Gingerbread_2.3.4_Devkit_2.1_Test_Report.pdf
|-- Prebuilt_Images
|   |-- AM35X
|   |-- AM37X
|   |-- AM37X_UBIFS
|   |-- beagleboard-rev-c4
|   `-- beagleboard-xm
`-- Tools
    |-- Flash_Tool_01_06_00_00.zip
    |-- android-sdk_r06-linux_86.tgz
    |-- mk-bootscr

```

```
|-- mk-mmc  
|-- pinmux-utility.tar.gz  
`-- signGP
```

## New features in this Release

- The following items are newly added in this release
  - Mouse cursor support for the gingerbread
  - Power Management feature Smart Reflex
  - Camera Image capture on AM37X
  - WL1271 drivers with based on compat release
  - Support for Open Accessory Libraries with Android 2.3.4 release
- The following features from previous release are provided
  - Fastboot
  - WLAN (WL1271) on AM37x EVM
  - NAND UBIFS booting
  - UI and video on S-video
  - Adobe Flash 10
  - USB Mass Storage
  - Audio Record feature in Android
  - Bluetooth connectivity for OPP, A2DP, HSP and HFP profiles
  - Camera Image capture on Beagle XM
  - Performance measurements using RowboPERF, 0xbench and rowboatbench
  - Media clips for Audio, Video and JPEG
  - Keypad support on AM35x EVM
  - Power Management Features (Suspend-Resume, DVFS, CPU Idle, OFF Mode)

## What's Not Supported

- The following items are not supported:
  - AM/DM37x Processor card with Micron Memory
  - Multimedia DSP acceleration on AM37x EVM

## Installation and Usage

The DevKit release is maintained at [http://software-dl.ti.com/dsps/dsps\\_public\\_sw/sdo\\_tii/TI\\_Android\\_DevKit/TI\\_Android\\_GingerBread\\_2\\_3\\_4\\_DevKit\\_2\\_1/index\\_FDS.html](http://software-dl.ti.com/dsps/dsps_public_sw/sdo_tii/TI_Android_DevKit/TI_Android_GingerBread_2_3_4_DevKit_2_1/index_FDS.html)

The DevKit is available as a single component "TI-Android-GingerBread-2.3.4-DevKit-2.1.tar.gz" or as individual component packages.

Please refer to the TI-Android-GingerBread-2.3.4-DevKit-2.1 User Guide <sup>[7]</sup> for more information on how to install and use the DevKit

## Known Issues

Component	Issue Description	Workaround	Comments
Hardware	USB EHCI Host port doesn't work on few AM37x EVMs	No workaround	No fix available currently, suggestion is to use TI USB PHY
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
Hardware	Video display is not clear when displayed over s-video Not observed on LCD TVs	No workaround	Not consistent on all TVs
Software	When the system is set to display through the S-video output, the display start flickering after a wake-up from suspend	No workaround	To be fixed in future releases
Software	Acquiring different WakeLocks doesn't change power consumption	No workaround	To be fixed in future releases
Software	Netperf Ethernet performance is low when using a buffer size of 8192	No workaround	Other buffer sizes give better performance, see the performance results sheet for this release
Software	System does not obtain IP address automatically after booting	Use netcfg <eth0> dhcp on the console.	See user guide for more details
Software	ARM performance data is not shown sometimes when RowboPERF runs ARM bechmarks	No workaround	To be fixed in future releases
Software	On AM37X, after suspend-resume adb over USB connection is not being reestablished.	Use "adb over Ethernet" when enabling PM	See user guide for more details
Android WiFi	Power Consumption values are higher with Wi-Fi and Bluetooth enabled.	No workaround	To be fixed in future releases
Tool	Flashing NAND using flash utility v1.6 doesn't work over UART	USB can be used with same utility to flash the NAND	
N/A	system boot-up takes too long, UI is less responsive, or video playback is sluggish	use the SD cards listed in the "SD Card Recommendations" section in the User Guide	
Android WiFi	After connection drop WiFi doesn't connect to Access Point automatically.	User need to disconnect and connect again.	To be fixed in future releases

## Version

This is Release TI Android GingerBread 2.3.4 DevKit 2.1

The release is available from [http://software-dl.ti.com/dsps/dsps\\_public\\_sw/sdo\\_tii/TI\\_Android\\_DevKit/TI\\_Android\\_GingerBread\\_2\\_3\\_4\\_DevKit\\_2\\_1/index\\_FDS.html](http://software-dl.ti.com/dsps/dsps_public_sw/sdo_tii/TI_Android_DevKit/TI_Android_GingerBread_2_3_4_DevKit_2_1/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](http://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://arago-project.org/git/projects/u-boot-omap3.git>
  - [3] <http://gitorious.org/rowboat/kernel>
  - [4] <http://arago-project.org/git/projects/linux-omap3.git>
  - [5] <http://gitorious.org/rowboat/hardware-ti-sgx.git>
  - [6] <http://focus.ti.com/docs/toolsw/folders/print/adobe-flash-a8.html>
  - [7] [http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3.4-DevKit-2.1\\_UserGuide](http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3.4-DevKit-2.1_UserGuide)
  - [8] [http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3.4-DevKit-2.1\\_DeveloperGuide](http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3.4-DevKit-2.1_DeveloperGuide)
  - [9] [http://processors.wiki.ti.com/index.php/Android\\_Benchmarks\\_DevKit2.3.4v2.1](http://processors.wiki.ti.com/index.php/Android_Benchmarks_DevKit2.3.4v2.1)
  - [10] [http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3.4-DevKit-2.1\\_PortingGuides](http://processors.wiki.ti.com/index.php/TI-Android-GingerBread-2.3.4-DevKit-2.1_PortingGuides)
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