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# HP TouchPad 4G

## *Release Notes*

### **CyanogenMod 11 (KitKat) w/ Linux 3.0 kernel**

#### **Revision History**

<b>Date</b>	<b>Version</b>	<b>Description</b>
02 November 2014	Beta 06	Initial general release of CM11 for the HP TouchPad 4G

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## 1. Introduction

### 1.1 Disclaimer of Warranty

This software is provided by the project and contributors ``as is'' and any express or implied warranties, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall the project or contributors be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.

### 1.2 Acknowledgements

Special thanks to those that made this release possible:

- James Sullins (jcsullins): CyanogenMod development for the TouchPad WiFi and 4G..
- William Bellavance (flintman): Linux 3.x kernels and drivers for the TouchPad 4G.
- Tomasz Rostanski (Dorregaray): Ccamera and sensor (gyroscope) development.
- gamer765: Early testing of TouchPad 4G builds.
- Dan Pasanen (invisiblek), Micha LaQua (milaq), David R. Marble (drmarble), and shumash: HP TouchPad device and kernel development and support.

Special thanks to the Ericsson MBM developers ([Sourceforge MBM](#)) for their work on the MBM HAL, including the pre-release version of the MBM HAL 4.0.0 BETA which is utilized for the HP TouchPad 4G releases.

### 1.3 Platform Supported

This release is for the HP TouchPad 4G (P/N: FB354UA#ABA) with the stock Ericsson F5521gw Mobile Broadband Module (MBM).

### 1.4 Online Support

Online support is available through the following links:

- Background information, support, and downloads: [HP TouchPad 4G](#).
- Discussion and support: [WebOS Nation - Android on 4G TouchPad](#).

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## 2. About This Release

### 2.1 Description

The 02 November 2014 CM11 (KitKat) build release incorporates general CM11 merges as of the build date. It uses James Sullins Linux 3.0 kernel for the HP TouchPad modified as necessary to support the Erickson MBM. It also includes CyanogenMod source code patches incorporated in James Sullins 15 November 2014 CM11 Wi-Fi release for the HP TouchPad.

There are two versions of this release:

- Native landscape mode (same as prior CM releases)
- Native portrait mode (same as WebOS)

### 2.2 Requirements

#### 2.2.1 Datamedia

This release is a **datamedia** build. You need to use **TPToolbox** or **Tailor** to re-size 'partitions' to increase the size of the cm-data partition (reducing the size of the external 'sdcard' shared with WebOS), if you have not already done so. Recommended minimum sizes for the CyanogenMod required partitions are:

- cm-system: 704M
- cm-cache: 200M
- cm-data: 1000M or more

It is easiest to use the WebOS pre-ware app Tailor. See: [Guide for changing partition sizes](#). You can also use James Sullins' **TPToolBox** v4.1 (see **3. Installation** for more information).

The table below shows my test platform setup. Note: you need to use the Busybox version of 'df' to get the '-k' option when checking the KB size using Android Terminal.

Logical Volume ('partition')	KB ('df -k')	GB	Tailor
/devices/virtual/block/dm-6	12,571,584	11.989	12,280
/dev/store/cm-system	830,500	0.792	824
/dev/store/cm-cache	201,568	0.192	200
/dev/store/cm-data	15,117,312	14.417	15,000
<b>Total</b>	<b>28,720,964</b>	<b>27.390</b>	<b>28,304</b>

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## 2.2.2 Support Files

The required support files include a custom datamedia recovery and Google Applications (GApps). Various versions are provided on the main support page ([HP TouchPad 4G](#)). I recommend the following versions if you do not have another preference:

- [gapps-kk-20140606-signed.zip \(full\)](#)
- [update-TWRP-jcs-dm-tenderloin-20140612.zip](#)

## 2.3 Features

### 2.3.1 Sensors

- Sensors generally work correctly for the native portrait mode build.
- Sensors may not work correctly in the native landscape mode build if the application only works in portrait mode. It may work correctly if you force the application to be in landscape mode.
- Smart Compass works in portrait or landscape mode with top of tablet pointed up in portrait orientation.

### 2.3.2 Tethering

- Bluetooth tethering does **not** work in this release (to be included in next release)
- Portable Wi-Fi Hotspot does **not** work in this release (to be included in next release).

### 2.3.3 Battery/Power

- This release incorporates the battery life improvements from the Wi-Fi builds.
- However, the MBM is waking more frequently than it should and is consuming power during sleep. This is still a work in process to be incorporated/fixed in future releases.

### 2.3.4 Data Usage

- Data Usage does work for both Wi-Fi and Mobile data in this release.

### 2.3.5 Email

- Email has been patched to allow downloading zip and other compressed files.

### 2.3.6 Auto Brightness

- James Sullins' revisions to the auto brightness profile and ranges are included.

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## 2.3.7 Supported Mobile Connections

The Ericsson F5521gw Mobile Broadband Module (MBM) supports:

Network Standard	Max Download Speed (kbps)	Max. Upload Speed (kbps)	Status Bar Symbol
GSM/GPRS	85.6	42.8	G
EDGE Evol	1,894.4	947.2	E
WCDMA (UMTS)	384	384	3G
HSDPA	14,400	384	H
HSDPA+HSUPA	14,400	5,760	H
HSPA Evol	21,000	5,760	H+

## 2.4 Known Bugs and Limitations

- The Home button and Volume rocker will not wake the device. You must use the Power button.
- Bluetooth Tethering and Wi-Fi Hotspot are not enabled in this release.
- Wi-Fi will turn off during screen off if you do not uncheck "Wi-Fi Optimisation" in advanced Wi-Fi settings.

## 2.5 Workarounds

- The lowest battery drain will be experienced if the Mobile and Wi-Fi connections are turned off and Location Services are disabled.
- If the brightness levels are not to your liking, they can be changed by going into the settings for automatic brightness levels. First reset the new values by turning on "auto" next to the brightness slider. Then, select the settings icon on the far right of the slider, select "adjust", select "reset", select "OK", select "OK", select "OK". You can then adjust the brightness levels as desired.

## 2.6 Planned Future Enhancements

- Enable Bluetooth tethering and Wi-Fi Hotspot.

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## 3. Installation

### 3.1 Datamedia Warning

**Warning!** If this is the first time you have installed a datamedia version of Android for your HP TouchPad 4G, it is strongly recommended that you use **TPToolBox** to perform the install. You must also re-size the logical volumes ('partitions') as described in **2.2.1 Datamedia**, either by using **Tailor** under WebOS or by using **TPToolBox**.

It is also strongly recommended that you do a **clean install** (erase the Android system, cache, and data partitions, but not the external data partition) when first installing a CM11 release. When first starting the new release, you can log into your Google account to restore your applications.

### 3.2 TPToolBox

A link to James Sullins' TPToolBox v4.1 (the version required for the HP TouchPad 4G) is located on the general support site at: [TPToolbox by James \(JC\) Sullins 4.1](#). Be sure to read and understand all the instructions in the initial posts to the TPToolBox release site on XDA Developers: [TPToolBox](#) before you proceed with your installation. Once you understand the process, it is reasonably easy to perform – actually much easier than the earlier installation methods.

During the installation, you will need to copy the CM11 release, a custom datamedia recovery, and a Google Applications (GApps) package to a directory on your HP TouchPad 4G internal or external storage.

### 3.3 Initial Start Up

After a clean install, the initial boot sequence may take twice as long as normal. Upon startup, you will need to go through the initialization process, turn on Wi-Fi and connect to the Internet, and then log into your Google account. Google will then begin restoring your Android applications. Let it run its course and wait a while before turning Wi-Fi off and attempting to establish a mobile connection. You may get bars but no service. Go to Mobile networks in Settings and pick Access Point Names. For the AT&T SIM, it may have defaulted to the 'pta' APN for LTE and you will need to select "broadband". For other SIMs, you will need to select the proper APN from the list, or else enter your own APN settings.

I have found that the Mobile connection may not be stable until the system is re-booted once or twice. Then it should be stable. I went over 90 hours last week without a lost connection or re-boot while traveling across the state and into another country with roaming and back.

To enable Developer Options, go to **Settings->About tablet** and tap on **Build number** until it is enabled. Go to **Settings->{} Developer Options** and select **Advanced reboot**.

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## 4. Usage Instructions

### 4.1 Data Storage

Datamedia builds for the HP TouchPad 4G have two separate data storage areas. These are actually separate logical volumes managed by the Logical Volume Manager (LVM) as a part of the total 32M internal memory. These storage areas are:

- **Internal storage:** This storage is used by Android as its internal storage for program data. It is not accessible when running WebOS.
- **External storage (SD Card):** This storage mimics an external SD Card. It can be accessed by either Android or WebOS and is typically used for pictures, music, video, or other media files.

In this release, internal storage is accessed through directory paths: /sdcard, /storage/sdcard0, and /mnt/sdcard, (among others). External storage is access through directory paths: /external\_sd, /storage/sdcard1, and /mnt/external\_sd (among others).

### 4.2 SIM Information

If you are new to the HP TouchPad 4G, enter *lwaactivate* as the APN (instead of *broadband*) with the AT&T SIM that comes with the HP TouchPad 4G. If you have no plan activated, this should allow you to connect to <https://buyasession.att.com>. From there you can buy a session with AT&T.

Users have reported success with the following SIMs:

- AT&T SIM included with TouchPad 4G
- Non-TouchPad AT&T SIM
- T-Mobile SIM
- UK Orange SIM
- Vodafone 3G HSPA SIM
- Smart Communications SIM (SMART)

Only SIMs that include the Universal Subscriber Identity Module (USIM) application, also termed '3g SIMs', seem to work with the Cynaogem MBM builds. Standard SIMs (termed 'legacy SIMs') work on WebOS but not the CyanogenMod MBM builds.

The Ericsson F5521gw Mobile Broadband Module (MBM) in your TouchPad 4G must be unlocked to use a non-AT&T SIM. If the device is unlocked, any prepaid SIM will likely work. Note: GPS should still work with a locked module and a non-AT&T SIM.



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Sets of APN values are included in the release for a wide range of carriers. Generally, you will be able to select the correct one for you SIM from the settings menu. The APN settings for the AT&T HP TouchPad SIM are as follows:

Value	Setting
Name	ATT TouchPad
APN	broadband
Username	WAP@CINGULARGPRS.COM
Password	CINGULAR1
Server	wap.cingular
MMS	http://mmsc.cingular.com
MMS Proxy	wireless.cingular.com
MMS Port	80
MCC	310
MNC	410
APN Type	default,supl,mms
APN Protocol	IPv4

## 4.3 Messaging (SMS/MMS)

Messaging capabilities will depend on your carrier and voice/data plan linked to your SIM. The following have been confirmed to work with the messaging services in CyanogenMod on the HP TouchPad 4G.

- **AT&T HP TouchPad 4G stock SIM:** AT&T Tablet Data Plans support messaging if linked to an AT&T account with a voice/smartphone or other billed plan. AT&T Smartphone Data Plans reportedly support SMS and can be used for the TouchPad 4G.
- **Non-TouchPad AT&T SIM:** If you have an AT&T SIM in your smartphone associated with a data plan, you may be able to insert it into your TouchPad 4G and obtain full mobile and SMS access.
- **T-Mobile SIM:** Supports messaging.

SMS (Short Message Service) can contain up to 160 characters. Longer messages or messages with attachments use MMS. MMS is controlled by the APN in Android. If MMS is failing, double check your APN information.

Android uses a PDU (protocol description unit) to send and receive SMS messages. Sent and received SMS messages travel through a Short Message Service Center (SMSC) gateway; essentially a phone number. A common symptom of a badly configured SMSC is when your device is able to receive SMS but not send SMS. The following directions are taken from: [SMSC Updates](#).

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To check and/or update your TouchPad 4G, you will need your carrier's SMSC gateway number. A list of numbers can be accessed here: [SMSC Numbers](#). Below are the numbers for major US carriers. Notice the numbers include the + which must be entered.

- AT&T: +13123149810 (default)
- Sprint: +17044100000
- Verizon: +316540951000
- T-Mobile: +12063130004

You need to use the special testing settings to get (refresh) or set (update) the SMSC gateway on your TouchPad 4G. You will need an app like Battery Monitor Widget Pro (BMWP) that provides access to the Test menu ('Tests' button in lower right-hand corner in BMWP). The process is as follows:

1. From the Testing screen, select 'Tablet Information'
2. Scroll down to SMSC
3. Hit 'Refresh' to see current SMSC number
4. If it is absent or not correct, enter in your carrier's SMSC gateway number
5. Hit 'Update'

Once entered, it can take up to 10 minutes for the phone to 'handshake' with the new gateway. A reboot is also suggested to power cycle the radio. Assuming everything worked, you should now be able to send and receive SMS properly.

## 4.4 Debugging

Larger debug buffers are included in this release. If you are providing debug logs to assist with fixing issues in the 4G releases, please follow the directions below to dump all logs. You will need to have superuser status in Android Terminal.

1. Start Terminal Emulator and type **su** to get superuser status
2. Type **alddf.sh** and all logs will gzip'ed and saved in /sdcard/logs

## 5. Downloads and Source Code

The device, kernel, and MBM source code can be accessed through github here: [NewbyJE](#).

The specific manifest and patches used for building this release are here: [cm11-mbm 3.0](#),