

Chumby[®] Widget Development



latte



one

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Chumby Classic (\$149.95)



latte

- 3.5" LCD color touchscreen
- 5.5" wide x 3.5" tall x 3" deep
- 2 USB 2.0 full-speed ports
- 350 MHz ARM processor
- 64 MB SDRAM
- 64 MB NAND flash ROM
- 2W stereo speakers
- Stereo headphone output
- Accelerometer (motion sensor)
- Leather housing
- AC adapter included
- Wi-fi connectivity (802.11 b/g)
- USB ethernet compatible
- Dimmable backlight
- One-click control panel access
- Access to free chumby content
- Over-the-air software updates
- Free charm set one included with each chumby classic

Legend:
Advantage
Disadvantage

Chumby One (\$119.95)



3.5" LCD color touchscreen

Uses rechargeable lithium ion battery (not included);
about one hour on a full charge

4" wide x 4" tall x 3.5" deep

1 USB 2.0 high-speed port

454 MHz ARM processor

64 MB DDR SDRAM

Internal 2 GB microSD card firmware

2W mono speaker

Stereo headphone output

Volume knob

FM radio tuner

Accelerometer (motion sensor)

ABS plastic housing

AC adapter included

Wi-fi connectivity (802.11 b/g)

USB ethernet compatible

Dimmable backlight

One-click control panel access

Access to free chumby content

Over-the-air software updates

Legend:

Advantage

Disadvantage

Chumby Widgets

 OVERVIEW

 FREE CHUMBY CONTENT

 NEWS & ENTERTAINMENT

 MUSIC & PODCASTS

 PHOTO VIEWING & SHARING

 SOCIAL NETWORKING

 GAMES

 WEATHER

 VIDEOS

 SPORTS

 AUCTIONS & CLASSIFIEDS

 ALARMS

 MESSAGING

free chumby content

What is FREE chumby content? It's a collection of over 1,500 widgets in more than 30 categories, such as weather, social networks, photos, sports, news, entertainment, videos and much more. chumby content is always evolving – we're constantly bringing the most interesting information on the web right to your chumby so you don't have to search for it yourself. And the best thing about all this chumby content is that it's FREE!

No subscriptions to pay, no plans to sign up for. It's paid for by chumby industries and by sponsor companies who will be sending you widgets such as music, games, movie previews, customized alarm clocks, and special offers for products. chumby industries is 100% dedicated to keeping your widget channels new, intriguing, fun and FREE. Check out all our categories and the latest hot widgets on the [browse widgets](#) page. If you've got a programmer's touch you can even publish your own widgets.



Chumby System Software

- Open Source, modification encouraged!
- Linux 2.6.16 kernel
- Web server
- Frame buffer via cgi-bin (disabled by default)
 - View current Chumby screen on your web browser
- Secure shell daemon sshd (disabled by default)
- Adobe Flash Lite (widget player)

What is Adobe Flash?

- Animation
 - Flash can display moving text and still images
- Interactivity
 - Flash can capture user input via mouse, keyboard, microphone and camera
- Video
 - Flash can be used to embed video
- ActionScript
 - An implementation of ECMAScript
 - Same syntax but different class libraries than JavaScript

Flash Runtime Clients

ActionScript programs can be executed in three different client runtime environments.

- Flash Lite
 - Flash content for Chumby and mobile devices
- Flash Player
 - Flash content for web deployment
- Adobe AIR
 - Flash content for desktop deployment

Common Flash Filename Suffixes

- .swf – Flash compiled code file
- .flv – Flash video file (can be contained within a .swf file)
- .fla – Flash source code (binary compound file format)
- .as – ActionScript source code (text file)

Flash File Format (.swf)

- A .swf file can include
 - ActionScript bytecode
 - Embedded assets
 - e.g. graphics, sound, video, fonts
- A program can be broken into multiple .swf files
 - One .swf file is entry point and loads the other .swf files as required

ActionScript Development Tools

- Open Source
 - FlashDevelop (free)
- Adobe
 - Adobe Flex SDK (free)
 - Adobe Flex Builder 3 (\$699, free for education)
 - Adobe Flash CS4 Professional (\$699, \$249 for education)

FlashDevelop Installation

- Install FlashDevelop
 - <http://www.flashdevelop.org/downloads/releases/FlashDevelop-3.1.0-RTM.exe>
- Install the Flash Player 9 ActiveX control content debugger (for IE)
 - http://download.macromedia.com/pub/flashplayer/updaters/9/flashplayer_9_ax_debug.exe
- Fetch the Flash Player 9 Projector content debugger
 - http://download.macromedia.com/pub/flashplayer/updaters/9/sa_flashplayer_9_debug.exe

Pendulum Widget Demonstration

- Pendulum Example
 - <http://wiki.chumby.com/mediawiki/index.php/Pendulum>
- Sample widget that utilizes the accelerometer to simulate a pendulum.
 - Move the Chumby to swing the pendulum.
- Build pendulum project
 - Open pendulum.fdp in FlashDevelop
 - Build .swf (F8)
 - Run .swf (F5)

Recommended Books

- ActionScript for Flash MX, The Definitive Guide; Colin Moock (Paperback, 2002)
 - ISBN-10 : 059600396X ; ISBN-13 : 9780596003968
- Essential ActionScript 2.0 : Colin Moock (Paperback, 2004)
 - ISBN-10 : 0596006527 ; ISBN-13 : 9780596006525

Recommended Web References

- Chumby
 - <http://www.chumby.com/>
- FlashDevelop
 - <http://www.flashdevelop.org/>
- Chumby wiki FlashDevelop page
 - <http://wiki.chumby.com/mediawiki/index.php/FlashDevelop>
- Adobe ActionScript reference documents
 - <http://www.adobe.com/devnet/actionscript/references/>

Thank You!



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