



GoDroid

Release Notes

v1.0



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Table of Contents

1	Introduction	1
1.1	Components	2
1.2	Terminology.....	2
2	Documentations.....	3
3	Tools Used	6
4	Features	7
4.1	Features in This Version	7
5	Limitations.....	9
6	Board Test	10
7	Technical Support and Upgrade.....	11
	Revision History	12
	Document Change History.....	12
	Software Changes.....	12

List of Tables

Table 1. GoDroid Component List	2
Table 2. GoDroid Documentation List.....	5
Table 3. List of Tools Used	6
Table 4. List of Supported Functions	8
Table 5. Board Test	10
Table 6. Document Change History	12
Table 7. Software Change History.....	12

1 Introduction

GoWarrior is a compact, open-source, community-supported embedded Android/Linux computing platform geared toward maker/ hacker/ entrepreneur/ dreamer/ artist/ student/ inventor/ hobbyist/ tinker. It brings together a rich feature set of innovative building blocks with cloud-driven back-end service deployment. It can be used to build complex applications that interact with high-level software and low-level electronic circuits, helping you from idea through prototype to commercial mass production delivery.

It is also an ideal platform for prototyping to project and product design that take advantage of the power and freedom of Android/Linux ecosystem, combined with direct access to input/output pins and buses, allowing you to interface with electronics components, modules, and USB/WiFi devices.

GoDroid is the integral Android-based software development kit of GoWarrior platform. There's a lot to understand about Android, but with GoDroid, this specially extend and optimize ease-of-use development kit, you can focus on bringing your creation to life without seeking for the accessibility of the Android.

This is GoDroid v1.0 release. All the product features and codes have been tested on GoWarrior TIGER Board. Based on Android 4.4.4, it also supports following features:

- Extended Java API for GPIO/SPI/I2C/UART
- Pre-integrated Python library compatible with Raspberry Pi and Beaglebone Black Python application
- Support Arduino board, shield communication and inter-operation

For full feature list, you can refer to Chapter 4 Features.

1.1 Components

You can get all components of this release by Git. The following table lists the independent components included in this release.

Component	MD5	Size (Bytes)
FTool	2e914981ce78c82f63493e14926944e5	2064896
U-Boot	d036b1b8728a9f80a42d01807292af16	262144
Boot arguments	88785aa8ee97e88c87567503bed2e61a	53248
Boot Media	05410dd1b7e2b2dd50a5ec036071dcf3	471232
Device information	bf7a0eb897be86c981bf1c1e35acfd6c	2504
Base parameters	d84e02aa58aa8ee4508b3eb28b474fdd	7480
Recovery	239c6d79ad01e3beb89b0d4fddfaee33	14232320
Back up	6829e709a386078fb4bcf4040286bd4e	191902378
Kernel	a6b637cfe115e6792260db8bfba00956	12794240
System	0fcca978220de61105c55b1dc91f81e6	245366784
User data	e0bf68734536889f45a3ce044ac49d71	31452800

Table 1. GoDroid Component List

1.2 Terminology

GoDroid: GoWarrior Android Development Kit

RTL: An acronym for Realtek

2 Documentations

The following table lists the documents that come along with the software release.

No.	Document Name	Description
1	GoWarrior_GoDroid Release Notes v1.0	This document
2	GoWarrior_GoDroid Datasheet v1.0	Data sheet specifies detailed functions in this release.
3	GoWarrior_Getting Started with GoDroid_v1.0	Introduces how to install and operate GoDroid.
4	GoWarrior_GoDroid_Developer Guide_v1.0	Provides detailed information to guide developers to get access to GoDroid release sources for GoWarrior TIGER Board, setting up host environment for compilation and enabling debug environment to ease the application development, debugging and deployment.
5	GoWarrior_GoDroid_Application Notes_USB ADB Debugging_v1.0	Provides guides for developers how to use GoDroid USB ADB debugger, including USB ADB related settings and some precautions.
6	GoWarrior_GoDroid_Application Notes_Compiling Server Installation and Configuration Guide_v1.0	Describes the installation and configuration of GoDroid compiler tool chain for GoDroid.
7	GoWarrior_GoDroid_Application Notes_How to Build Customized Projects_v1.0	Provides instruction of customized development for libraries and applications.
8	GoWarrior_GoDroid_Application Notes_System Configuration_v1.0	Provides practical guide to GoDroid system configuration.

No.	Document Name	Description
9	GoWarrior_GoDroid_Application Notes_Boot Logo and Animation Customization_v1.0	Provides introduction of the customization method of GoDroid boot Logo and animation.
10	GoWarrior_GoDroid_Application Notes_Standby Configuration_v1.0	Briefly describes GoDroid standby and power-off processes and related settings.
11	GoWarrior_GoDroid_Application Notes_How to Change Android fonts_v1.0	Introduces how to change the fonts in an application.
12	GoWarrior FTool_User Manual_v1.0	Mainly introduces how to use FTool tool to burn NAND Flash of GoWarrior TIGER Board.
13	GoWarrior_GoDroid_Programming Guide_Ext-Uboot_v1.0	Provides detailed guidance of software development for developers using GoDroid U-Boot software development kit.
14	GoWarrior_GoDroid_Application Notes_Recovery Package Making_v1.0	Introduces how to make a recovery upgrade package.
15	GoWarrior_GoDroid_Programming Guide_Ext-Recovery_v1.0	Introduces how to develop and implement the Recovery system.
16	GoWarrior_GoDroid_Application Notes_Flash Partition_v1.0	Introduces GoWarrior TIGER Board Flash partitions, including how to customize the generated partition image files.
17	GoWarrior_GoDroid_Application Notes_Arduino Support and Configuration_v1.0	Introduces how to configure TIGER Board to support Arduino.
18	GoWarrior_GoDroid_Application Notes_Motor Drive_v1.0	Introduces how to drive a motor.
19	GoWarrior_GoDroid_Application Notes_Python Application Support_v1.0	Introduces how to use Python on TIGER Board.
20	GoWarrior_GoDroid_Application Notes_Sensor Configuration and Use_v1.0	Introduces how to configure and use sensor.

No.	Document Name	Description
21	GoWarrior_GoDroid_Application Notes_Kodi Installation and Use_v1.0	Introduces how to install and use Kodi.
22	GoWarrior_GoDroid_Ext Java API Reference Manual _v1.0	Introduces TV setting API and Ext Java API for GPIO/SPI/I2C/UART.

Table 2. GoDroid Documentation List

3 Tools Used

The table below lists the tools used in this version.

Tool Name	Version	Description	Remarks
ARM Toolchain	arm-linux-androi deabi-gcc-4.7	Used for compiling AOSP source codes	N/A
ARM Toolchain	arm-linux-gnueab i-gcc-4.6.3	Used for compiling U-Boot and Linux Kernel	N/A
Burn Tool	GoWarrior FTool_v1.0	This tool is used for burning image files to Flash and supports burning MAC at specified address, etc.	It is located in following directory: build/tools/burnin gtools/.

Table 3. List of Tools Used

4 Features

4.1 Features in This Version

GoDroid v1.0 based on Android 4.4.4 provides the following features.

Function	Description
Boot	Supports boot from NAND Flash or MicroSD card. 7 and 35 seconds with NAND Flash from powering on to displaying boot splash and Android homepage respectively.
1st configuration wizard	When GoDroid is first power-up, a friendly configuration wizard will run for setting items such as Network, Display setting, etc.
Recovery	Supports IP/OTA/USB upgrade using a uniform upgrade package Supports full and incremental package upgrade Supports upgrading partition table, bootloader, recovery, and kernel
Multimedia	Extended media engine based on the GStreamer, supports multiple network protocols and formats of audio, video, container. KODI 14.2 supported
Input Device	Supports USB mouse and keyboard, ALi remote controller IR, remote controller with simulated mouse function, and standby wakeup for a variety of remote controller
Network Connection	Ethernet: 10/100Mbps Fast Ethernet (HW accelerated), IP DHCP/Static Wi-Fi: On-board RTL8723BU PPPoE: Supports wired dial-up internet connection

Function	Description
TV Setting	Supports TV system resolution setting, adjustment of display area size, brightness/saturation/contrast etc.
DLNA/Miracast	Supports multiple screens interactive in a variety of ways.
AV output	Supports HDMI/RCA output
Bootable MicroSD Card	Supports MicroSD card boot and as a secondary storage device.
Bluetooth	Supports the Bluetooth input devices like mouse, keyboard, and joystick, and support (audio only) Bluetooth output
USB camera	Logitech C920 camera is supported with JPEG shooting and H.264 video recording and playing back function.
Sensors	I2C sensor (MP6050) and SPI sensor (MAX31855) are demonstrated
PWM output	PWM output can be used as external motor drive.
Arduino support	Supports communication and inter-operation with Arduino through UART, Arduino Uno shield is demonstrated.
Extended interfacing	Extended JAVA API for GPIO/I2C/SPI/UART device access
Debugging	Supports ADB debugging via local network and USB
Pre-tested APK	A variety of APKs has been tested and can run smoothly on GoDroid. These APKs are pre-stored in /data/app-user/ but not installed yet, you can install specific ones as needed.

Table 4. List of Supported Functions

5 Limitations

- USB related
 - USB Port 1 will not work if the "USB Debugging" option is enabled.
 - Only Logitech C920 camera is supported, other types of camera may have issues in H.264 video recording;
- SD related
 - Please make sure that MicroSD card with NTFS file system is safely removed from PC, otherwise it cannot be recognized by the TIGER Board.

6 Board Test

The table below lists the platform configuration of GoDroid v1.0 for verification.

Board Model	Chip	Operating System	RAM (Frequency, Size)	CPU Frequency
TIGER Board	M3733-AFAAA	Android 4.4.4	1600 MT/s, 1GB	1.0GHz

Table 5. Board Test

7 Technical Support and Upgrade

For more information, or to report any troubles and problems, please contact GoWarrior engineering support team at the email listed below:

support@gowarriorosh.com

Revision History

Document Change History

Revision	Changes	Date
v1.0	Initial Release	September 07, 2015

Table 6. Document Change History

Software Changes

Revision	Changes	Date
v1.0	Initial Release	September 07, 2015

Table 7. Software Change History



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