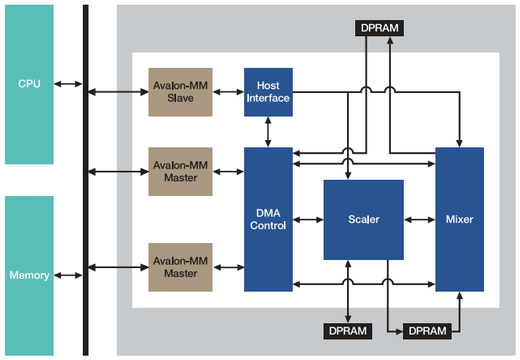
Block Diagram



Product Specifications

Compliant version	Android 4.0X
Supported pixel size	MAX 2,048 * 2,048 pixel
Required Logic Elements	6,500 LE (Reference value) 2,500 ALMs (Reference value)
Required Memory	524,288 bit [56(M10K)]
Required DSP blocks	38
Drawing functions	Scaling Rotation α blending Layer mixing
Bus specification	Avalon MM (32bit)

Performance comparison

	with GRAPHICS ACCELERATOR for Android	without GRAPHICS ACCELERATOR for Android
CPU usage [%]	19.0	48.8
Frame rate [fps]	55.0	33.0

Equipment used: Altera's Cyclone V SoC Development Kit(Cortex-A9 MP 800 MHz) / Terasic's Multi-touch LCD Module (Screen size 800 × 480 pixel)

Support

We can support a wide variety of other platforms and can also offer customization support for any specific requirements that a customer might have.

Technical OS Support (fee)

Customization Support (fee)

We are able to respond to various customer needs based on the vast experience of our Android development team.
Our company has a large number of engineers at its disposal that are trained in board and RTL design.
We offer a wide range of support from board and RTL design to device drivers and application software.
Please feel free to contact us for a consultation.

Deliverables

[Product offerings]

GRAPHICS ACCELERATOR for Android RTL (Encrypted)
GRAPHICS ACCELERATOR for Android specifications manual
GRAPHICS ACCELERATOR for Android APIspecifications manual
GRAPHICS ACCELERATOR for Android HAL Library

[References]

GRAPHICS ACCELERATOR for Android device driver
GRAPHICS ACCELERATOR for Android operating instructions
Quartus II Sample Project

Linux, Android is not included in the product. The Support fee for these are available separately.

Free evaluation version available now from the Fujisoft website http://www.fsi.co.jp/solution/android/e/

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Embedded Technologies

FUJISOFT

Achieve a smooth Android user experience

GRAPHICS ACCELERATOR for Android™

creating new values

Achieve a smooth Android user experience

Graphical HMI Platform Product

Android has grown to be the number one smartphone operating system.
While Android continues to be the most popular OS for smartphones and tablets, it is also being adopted for other embedded devices and industrial equipment.
However, high-performance CPUs are rarely used in embedded applications and the implementation of relatively low-performing CPUs will slow down the Android drawing process. This product is the solution!

Using Android can help you to overcome the problems mentioned below

task 1 Expensive software licensing costs.

Open Source software

There are a number of software libraries provided with Android. Taking advantage of these will reduce your development costs.

task 2 Do you want to create a more user friendly UI?

Android enables a rich UI

We can configure the UI screen for Android according to our customer's needs. It is also compatible with multi-touch, giving you the familiar easy-to-use feeling of smartphone operating systems.

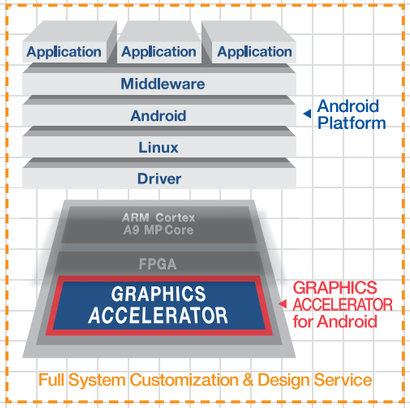
task 3 Would you like to include a network function but limit the development required?

Android is a platform for mobile information terminals and libraries that enable a network connection function are included.

task 4 Limited engineering resources familiar with embedded development.

The Android environment is easy to approach, even for engineers that are not familiar with embedded development.

Android provides a free API for controlling the hardware and a software development kit.



Summary

Fujisoft offers a graphic accelerator as shown in the block diagram on the left.
The implementation of this IP will accelerate the software processing.

Demo Kit Example

You can test with a development kit to get used to the Android environment and customer design or use your own board to implement Android.

Features

- Accelerates Android drawing process
- Low price
- Small Size
- Includes Driver and Android HAL

What are the benefits of using Altera SoC?

Installation of unique features.

It is possible to differentiate your product from your competition by implementing your own FPGA fabric features.

It is possible to start and evaluate immediately.

Development Kits are available from Altera's main distribution partners that you can use for evaluation and development right now.

Upgrading and repairing your solution is easy with this rewritable device.

By making use of the rewriting feature , it is possible to repair even if there is a bug in the product after the shipment.

Longer chip life in comparison to ASSP.

The risk of design changes can be reduced because the sales period for an FPGA is longer than that of an ASSP.