STiH315

ARM Cortex A9-based, hybrid set-top box platform

Data brief

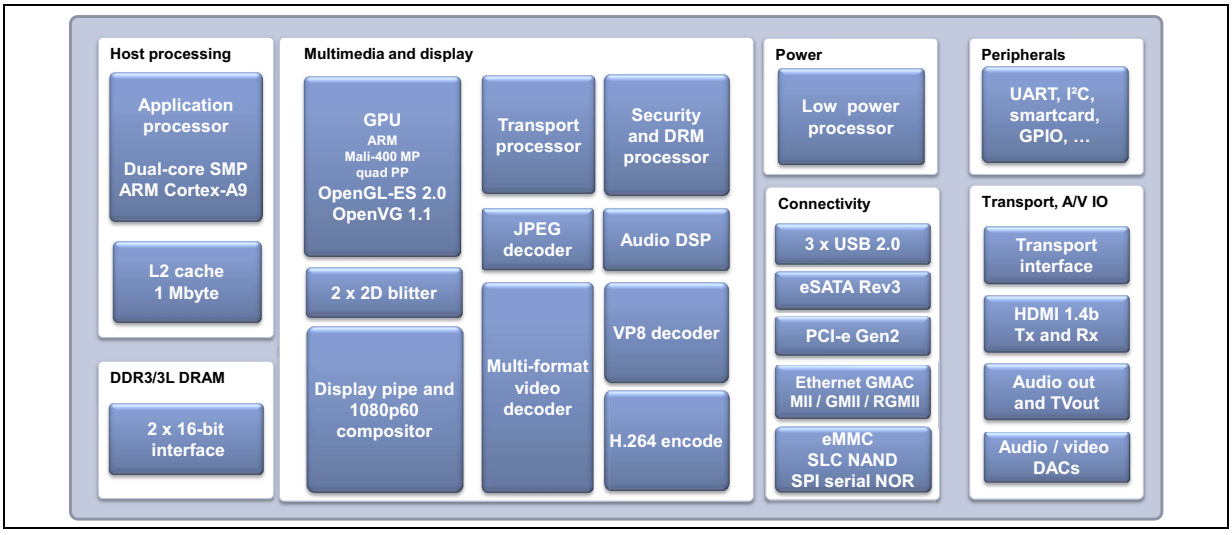
Features

- Dual core SMP ARM® Cortex-A9™ applications CPU at up to 1.2 GHz:
  - 6000 DMIPS
  - 1 MB L2 cache
- DDR3/DDR3L LMI running at up to 800 MHz (DDR3-1600)
- Video decoding:
  - H.264 AVC, one L4.2 (1080p60) or two L4.1 streams
  - H.264 MVC, SHP@L4.1 - 1080p30L30R
  - H.264 SVC, 720p50/60 base layer + 1080p50/60 enhancement layer
  - VP8, up to 1080p60
  - VC-1, MPEG4, MPEG2
- Web-based content decoding: Flash, DivX, Xvid, MJPEG, WMV
- 3DTV display: up to 1080i60L60R or 1080p30L30R
- High-performance ARM Mali-400 MP GPU for true 3D graphics:
  - 1400 Mpixel/s fill rate, 35 M triangles/s for 1080p30L30R resolution
- H.264 video encoding up to 720p30 for HD video conferencing
- HD video input, HDMI-Rx @1080p60
- Generation 4 security for concurrent CA/DRM support, including NOCS 3.0, NSK 2.0, SVP, DTCP-IP, WMDRM, DVB-CPCM, DivX, Marlin
- Integrated standby controller with low power micro and power islands — enables Wake-On-LAN and other interrupt events
- Connectivity:
  - 3 x USB 2.0, eSATA (Rev3), PCI-e (Gen2), SD/eMMC, Ethernet GMAC
- Package 31 mm x 31 mm

Description

The STiH315 integrates the leading application processor architecture to provide a powerful set-top box platform for connected client applications.

The STiH315 features integrated broadcast and broadband services, combined with the latest STB middleware and broadband software solutions.



1 Introduction

The STiH315 integrates in a single IC, multi-stream transport demultiplexing, an applications CPU, A/V decode, A/V encode, video processing, true 3D graphics and display, advanced security, STB peripherals, audio/video DACs, digital A/V outputs, HDMI output and input, eSATA3 ports, PCI-e, triple USB ports, an Ethernet controller (GbE capable), SLC NAND Flash controller and dual MMC/SD card controllers.

Features	Benefits
Dual core SMP ARM Cortex-A9 applications CPU, with 1 Mbyte L2 cache.	The high-performance dual core SMP ARM Cortex-A9 CPU for applications and middleware, is enhanced with a very large level 2 cache.
Quad core ARM Mali-400. Integrated graphics processing unit (GPU). Programmable Vertex (geometry) processor and fragment (pixel) processors, accelerated four times full scene anti-aliasing (4 × FSAA).	True 3D graphics and 2D vector graphics acceleration, optimized for HD consumer digital video applications. Compatible with the latest Open GL ES 1.1/2.0 and OpenVG 1.1 libraries, for best-in-class 3D graphics effects/games, font rendering and Adobe Flash support. Open GL ES 2.x ready. Decoded HD video can be used as textures for visually enhanced, video-rich navigation guides and user interfaces, and provides a platform for 3D gaming.
Latest generation of ST's video decoder with an ST231-based controller.	Decoding of advanced high-definition standards for broadcast (MPEG2, H.264, VC-1, AVS) plus the performance and flexibility for web-based content decoding such as Flash, DivX, Xvid, MJPEG, VP8 and WMV. New capabilities such as, Dual H.264 HP@L4.1 decoding for HD PIP, and video-video transition effects, decoding of H.264 HP@L4.2 (1080p60) and premium rescaling techniques open the way for high quality viewing of enhanced HD services on the latest generation of TVs.
H.264 encoding up to 720p30	Enables low latency HD video conferencing. Support for any HW webcam on USB, in raw YUV or MJPEG formats.
Latest generation transport/security subsystem, with enhanced performance for DVR client/server-based home networks.	Multi-stream transport demultiplexing, descrambling and section/data filtering. Up to four live TS inputs supported. Distributes content securely around the home.
Three USB 2.0 hosts, One e-SATA Rev3 host, One Ethernet MAC with MII/GMII/RGMII, One PCI-e (Gen2) interface.	Extensive high-speed connectivity for the widest range of STB peripherals, such as Flash drives, external HDDs, Gigabit Ethernet, home network controllers (for example, MoCA, WiFi), DOCSIS modem and memory cards.
Power management subsystem with built-in regulator, micro-controller and interface peripherals.	Best-in-class power management allows WOL and gives 30 mW DC SoC standby power and < 0.5 W AC at box level.

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
20-Aug-2012	1	Initial release.
17-Dec-2012	2	– Updated the document for number of USBs, MMC cards. – Changed the package information.
21-Jan-2013	3	Updated the introduction text.
19-Aug-2013	4	– Updated the ARM Mail-400 MP GPU bullet on cover page. – Replaced HDMI 1.4a by HDMI 1.4b in cover page diagram.

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