

V4L2 developer forum. HW

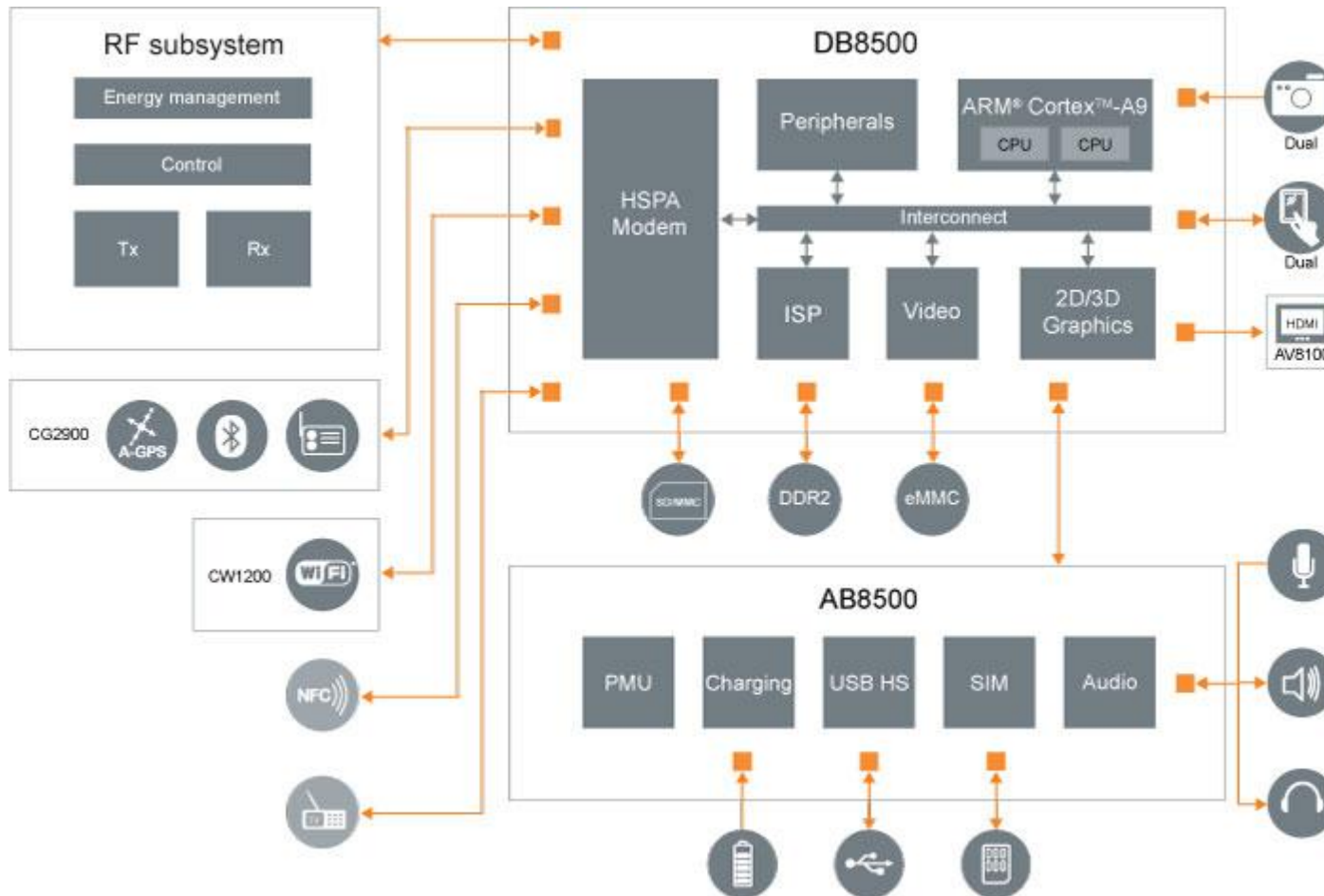
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Intro

- <http://www.stericsson.com/platforms/U8500.jsp>



U8500/U5500 hardware acceleration details (1/2)

- **3D Engine (MALI400)**
 - High performance HW acceleration of Open GL ES 2.0 and 1.1
 - High performance HW acceleration of OpenVG 1.1
- **2D Engine**
 - Dedicated 2D Engine compared to using only 3D for 2D
 - High performance memory to memory blit HW:
 - Tile-based / multi-pass operations supported using low latency ESRAM used for optimal performance
 - Support **Blitting**, **Blending**, **Resize**, **Rotation** & color and buffer format conversion
- **Display Engine**
 - High performance memory to display engine.
 - Display output and HDMI/TV-Out capabilities
 - Dual local display + HDMI 1080p/720p
 - Frame buffer exposed using standardized Linux kernel API (/fb0, /fb1, /fb2, /fb3)
 - On the fly color conversion and display buffer rotation

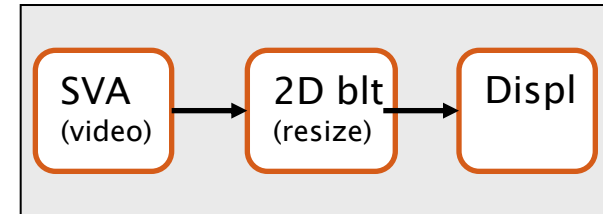
U8500/U5500 Hardware acceleration details (2/2)

- **Smart Video Accelerator (SVA)**
 - Hardware acceleration for video encode and decode
 - Up to 1080p/720p H264 HP support – U8500/U5500
- **Smart Imaging Accelerator (SIA)**
 - Example of key data for U8500
 - Embedded ISP up to 20 Mpix

- HW tunneling optimizes memory management and system performances
- 2D dedicated engine when no 3D is needed
 - Performance improvement
 - Lower power consumption

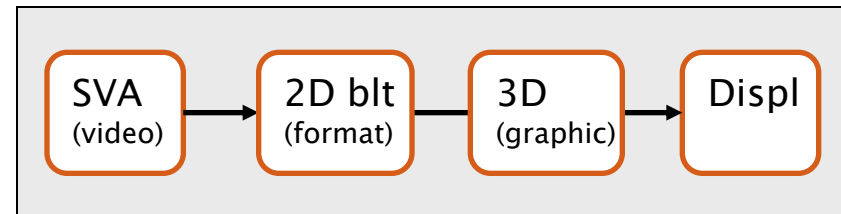
- Video-on-2D Flow

- Video IP (SVA) writes to YUV420MB-2 buffers
- Composition IP converts to YUV422R format
- Display IP reads it and drives the screen

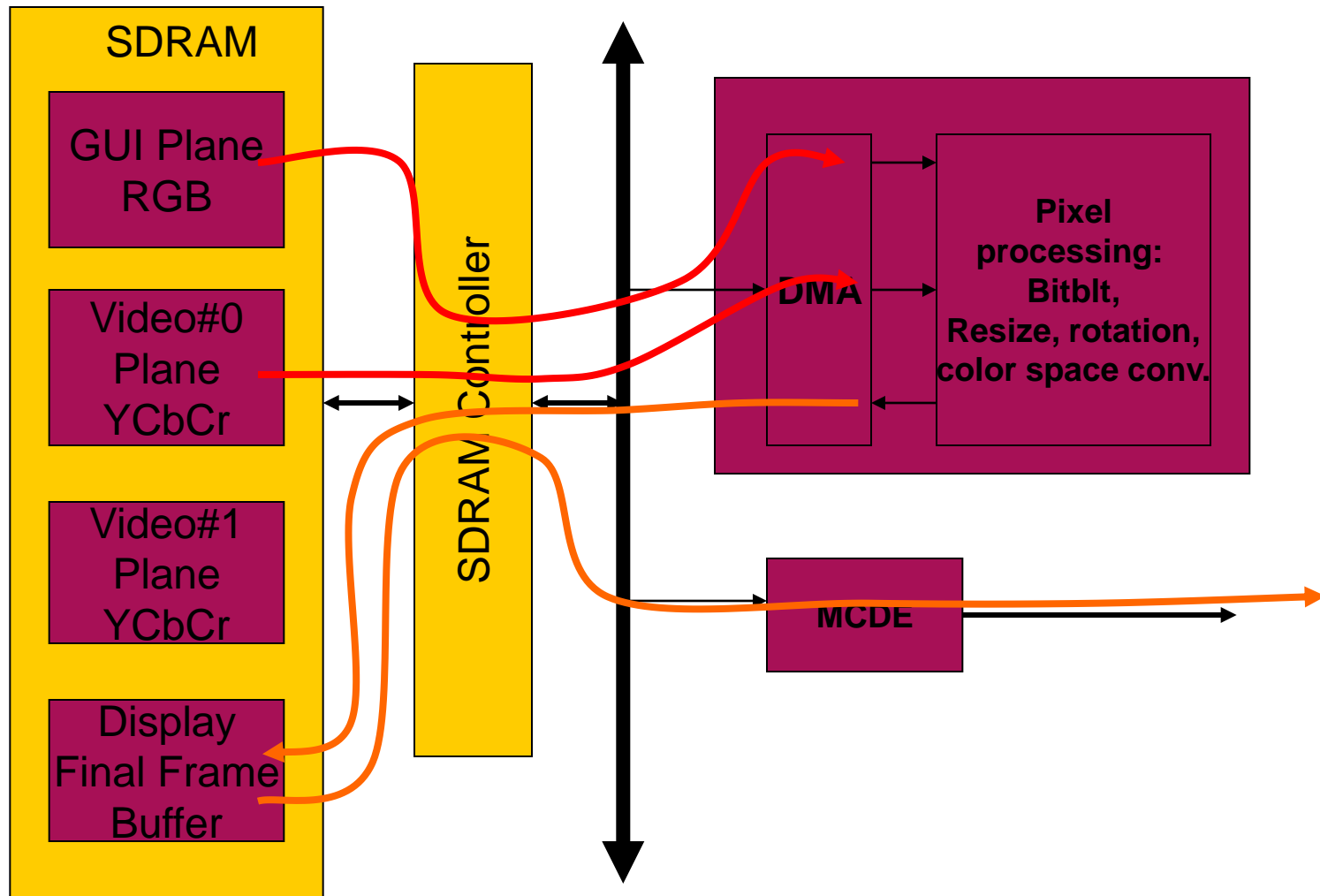


- Video-on-3D flow

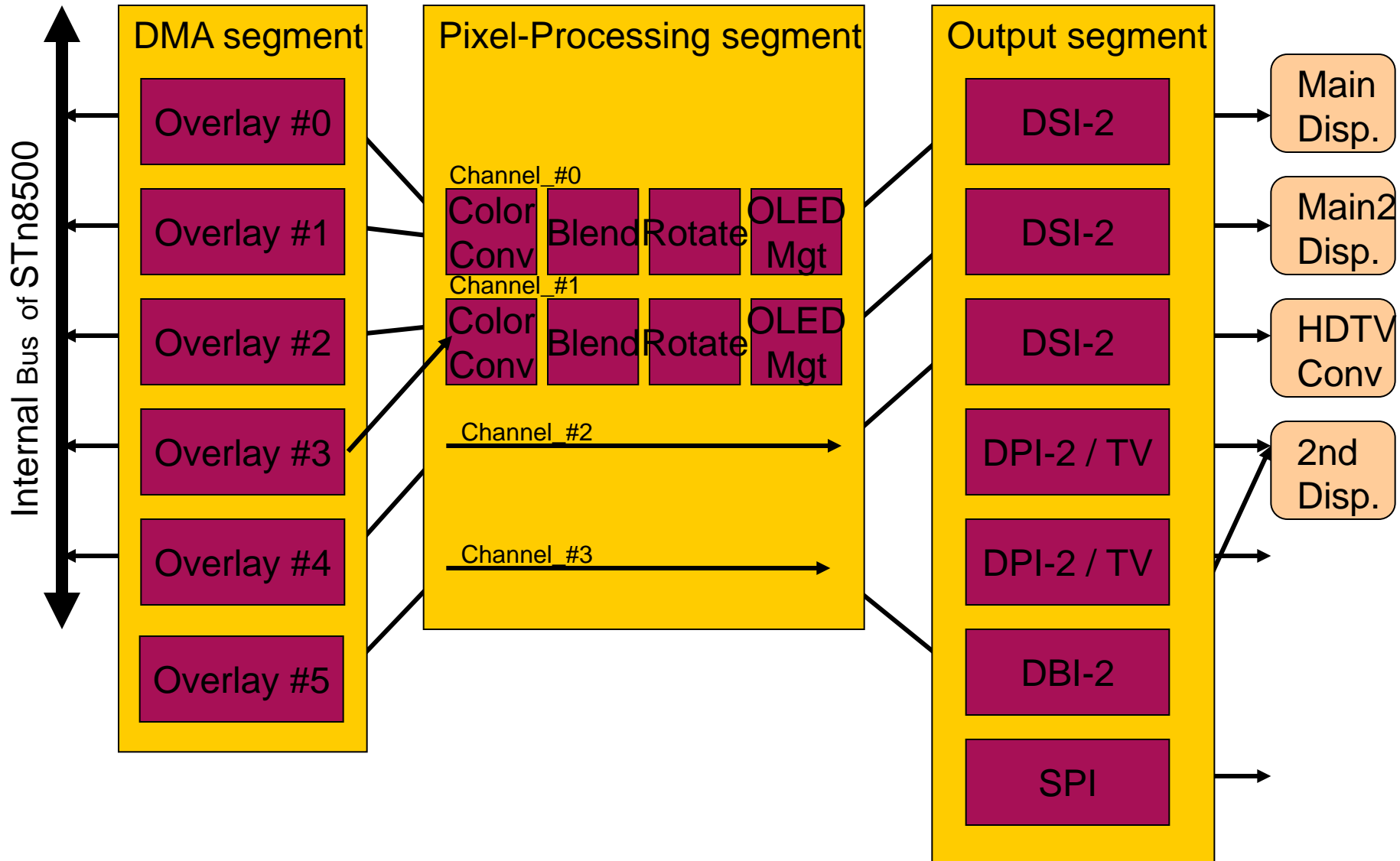
- Video IP (SVA) write to YUV420MB-2 buffers
- Composition IP converts to xRGB888 format
- Graphic IP (SGA) reads video as RGB, builds perspective, and writes as xRGB888
- Display IP reads it and drives the screen



B2R2: Pre-Composition



MCDE Features: Detailed Diagram



MOP 500 development boards

- <http://www.malideveloper.com/platforms/boards/st-e-mop500-development-platform.php>



MOP500 development board

Based on the ST-Ericsson U8500 smartphone platform

The ST-Ericsson MOP500 development platform is ideal for embedded application development for the next generation of smartphones. The platform is built around the ST-Ericsson U8500 - the first integrated baseband and application core using the latest SMP dual ARM Cortex-A9 in addition to the Mali-400 GPU for hardware accelerated 2D and 3D graphics. The U8500 is designed for open software platforms and supports Linux, Symbian and Google Android. The multimedia capabilities include an HD 1080p camcorder and an 18M pixels camera. It has an optional User Interface board that includes touch screen capability, ambient light sensors and a 6 x 3 keypad amongst many other features.

This powerful development platform comes in a small form factor of 16cm x 10cm and can be operated from a battery.

See specifications below for more details.

Order....

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THANK YOU

