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SupraXD® 180

HIGH DEFINITION H.264 SET-TOP BOX PROCESSOR

Product Brief

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Overview

The SupraXD® 180 processor is highly integrated and optimally suited for high definition Set-Top Box applications. The processor consists of an advanced multi-standard programmable decoder, multi-format high definition decoder, television quality video processor/scaler with HDMI output. Multiple connectivity ports such as USB 2.0 High Speed Host, Ethernet 10/100 and SATA allow this processor to cover a wide range of applications ranging from basic high definition Set-Top Boxes to network connected DVRs.

Standard transport stream interfaces enable seamless connection to commercially available tuners, demodulators and conditional access devices, providing maximum front-end flexibility. Front-end options include Terrestrial, Cable, Satellite and Ethernet communications. Complete reference design including schematics, documentation and software is available.

SupraXD® Processor 180 Features Summary

CPU

- MIPS® processors (850 DMIPS), supporting ThreadX and Linux operating systems

Memory

- DDR2 - 2 ports x16 bits, up to 450 MHz
- Flash - SPI, parallel NOR or NAND

Transport Stream Demultiplexer With Advanced Security

- 270 MHz secure processor
- Two Parallel or five Serial TS ports
- Multi-stream TS Demux supporting ATSC, DVB and ARIB
- Dual Smart Card interfaces with integrated protection & control
- DVB / Multi2 / NDS ICAM and SVP descrambling
- 1 KB OTP, secure boot and 3DES / AES support
- Advanced Security for Conax / Irdeto / Nagra / NDS
- Integrated two-slot DVB-CI and DVB-CI+ controller with integrated buffers

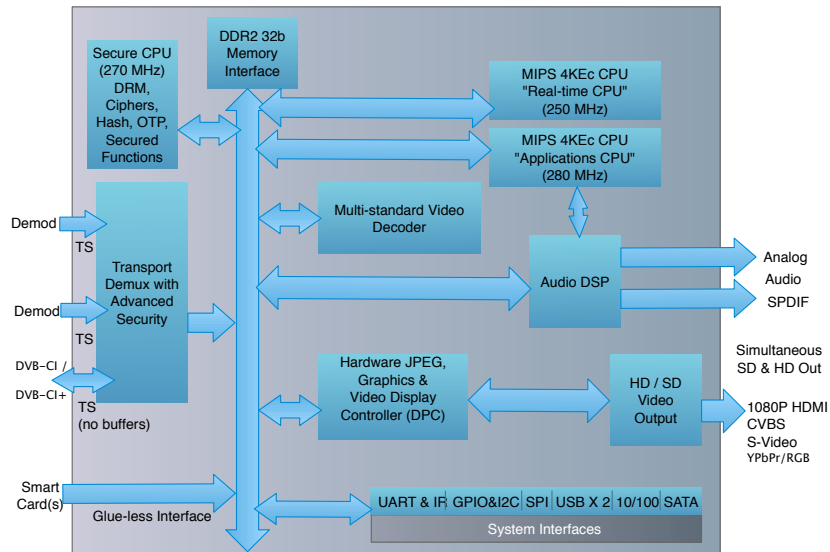
Video and Image Decoder

- Multi-standard programmable video decoder (HD or SD)
 - H.264/AVC:MP@L4, HP@L4.1 (MP or HP)@(L3.2 or L3.1 or L3)
 - VC1:SP@LL, MP@LL, MP@ML, MP@HL, AP@L1, AP@L2, AP@L3
 - MPEG-2: MP@ML, MP@HL
 - MPEG-4: L5 Advanced Simple Profile (ASP)
 - DivX
- JPEG hardware decoding

Graphics

- 32-bit RGB, BLT engine, Porter-Duff support
- Multi-plane graphic scaler / anti-flicker filtering, and blender
- Subtitles decoder
- Max Graphics Resolution 1920x1080P

SupraXD® 180 Processor Architecture Block Diagram



Video Processing and Output

- HDMI 1.3 including CEC, supporting 1080P output without external ESD filters
- NTSC / PAL video encoder with 5 integrated video DACs
- 3D noise reduction
- High quality Motion adaptive deinterlacing
- Horizontal/Vertical up/down scaler
- Selective color correction
- Edge enhancement

Audio

- Audio DSP capable of:
 - Dolby Digital, Dolby Digital Plus
 - MPEG (Layer I, II, II)
 - WMA
 - DTS
 - AAC
 - Post-processing
- S/PDIF, I²S, integrated stereo audio DACs

Interfaces

- 2 port USB 2.0 High Speed Host controller and PHY including power control
- SATA port
- 10/100 Ethernet MAC with RMI interface
- Guest bus, 3 x I²C, 4 x SPI, 3 x UARTs
- Integrated digital timing oscillator replacing VCXO (single crystal)

Package

- 23 mm x 23 mm 448 BGA Green package

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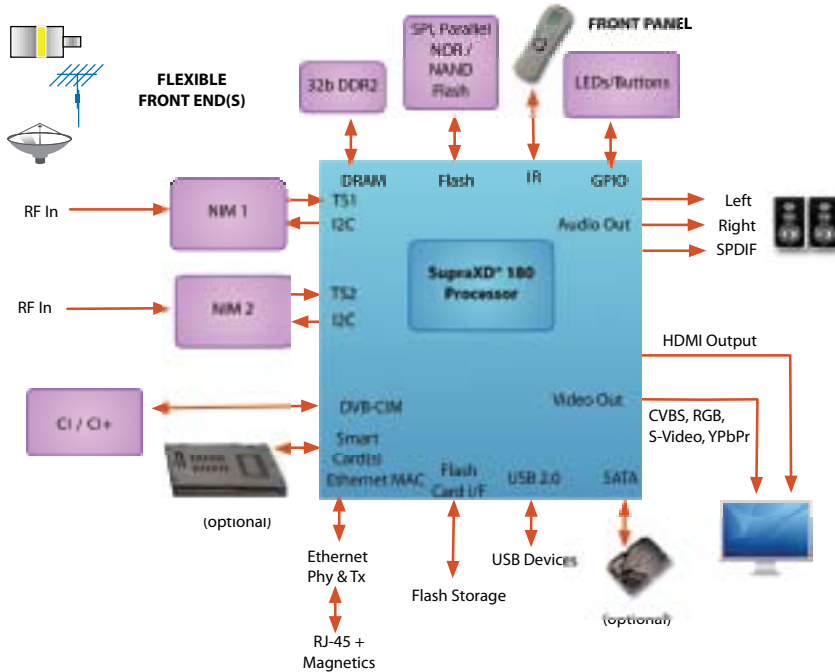
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SupraXD® Processor 180 System Block Diagram



SupraXD® 180 Reference Board and Validation Platform



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