MPEG-4 SD Hybrid Zapper Solution

Based on EMMA3SL2/LP

Renesas Electronics' MPEG-4 hybrid Zapper reference solution is a complete hardware and software platform based on the H.264 SD decoder EMMA3SL2/LP from Renesas. The platform includes smart card interface and is ready for CA integration.
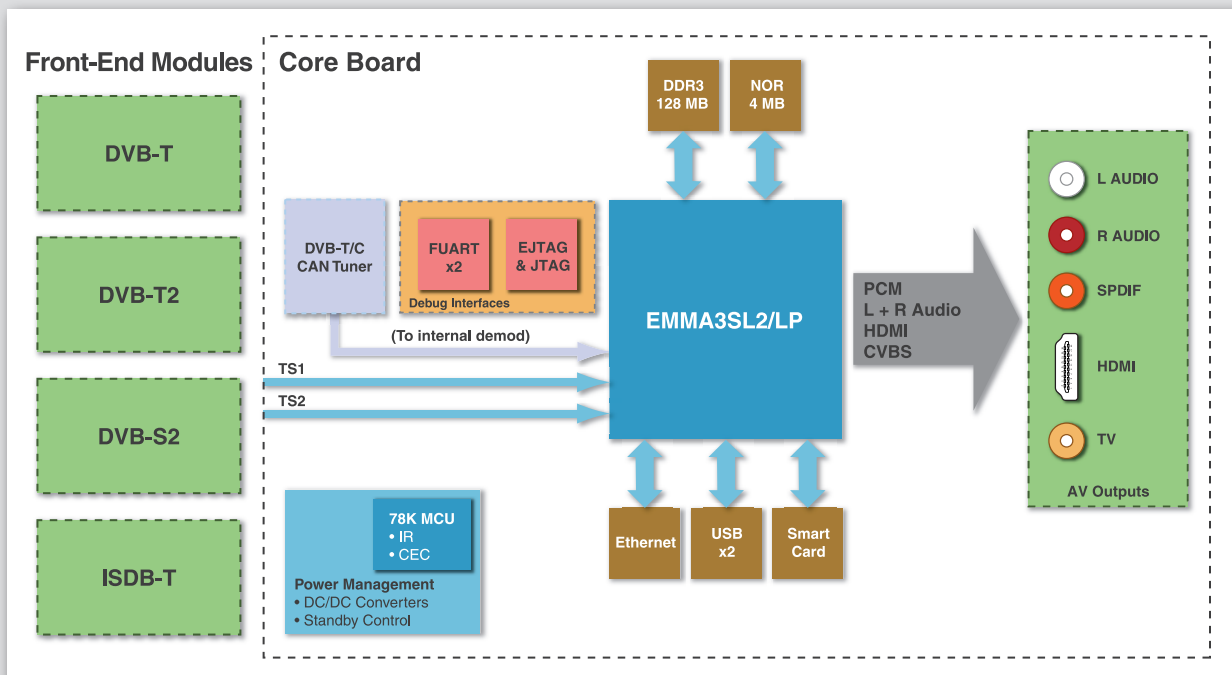
Applications

Renesas' reference design enables, in a short and secured time to market, the creation of cost, performance and power consumption optimised MPEG-4 SD hybrid Zapper with enhanced connectivity features. Full feature USB-DVR is also supported. The reference design is based on the latest EMMA3SL2/LP MPEG decoder device manufactured in Renesas' low power 40 nm process. The reference solution incorporates the advanced security features of the EMMA3SL2/LP IC defined to meet the most stringent security demands of conditional access companies. A range of front end modules enables the reference design to be used for both satellite and terrestrial markets.

Key Benefits

- Close to production ready design to reduce time to market and R&D expense
- Complete hardware kit, from schematics and material list up to PCB layout available
- Turnkey software available from Renesas Partners (with options for user interface adaption)

Block Diagram

MPEG-4 SD Hybrid Zapper Solution

Key Features

- Low cost Zapper STB
- SD MPEG decoder EMMA3SL2/LP
- DVB-T/C can tuner on core board
- DVB-S2/T/T2 and ISDB-T front end modules
- HDMI 1.4 output with up to 720 x 576 resolution
- USB interfaces for external storage connection
- Ethernet port to support OTT services (optional)
- Low power operation
- IR remote control

Description

Receiver

- Selection of pluggable front end modules
  - » Twin tuner DVB-S2
  - » Twin tuner DVB-T2 (Nordig compliant)
  - » Twin tuner DVB-T (Nordig compliant)
  - » Single tuner DVB-T/C (option on core board)
  - » Twin tuner ISDB-T

DVB Decoder (EMMA3SE/P)

- Processor — Dual MIPS 4KEc CPU → 1200 DMIPS 3 transport stream demux
- MPEG-4 — AVC, HP L4.2 (dual decode) MPEG-4 MVC High Profile, MPEG-4 ASP@L5, DivX HD, max. resolution 720 x 576
- MPEG-2 — MP@ML
- Audio Decoder
  - » HE-AAC, Dolby Digital, Dolby Digital Plus
  - » Audio Description, WMA, DTS, DTS transcode
  - » MS10, Real Audio

Security

- ISO-7816 smart card interface

Memory

- DDR3 — 128 MB (256 MB, 512 MB option)
- Flash — NOR (option 4 – 64 MB)

Low power

- Standby — < 0.5 W (subject to quality of AC adaptor)
- Active — 5 W approx
- Supply — +12 V DC (from external AC/DC adaptor)

Data ports

- USB2.0 — Two ports for external storage (option)
- Ethernet — 100Base-TX for access to OTT services or home networking (option)

Outputs

- TV out — CVBS
- Digital Video — HDMI 1.4 with HDCP
- Audio output — 2 x RCA (analog), S/PDIF (digital) electrical

Deliverables

The kit can be supplied as	Reference hardware (guide for in-house design): hardware database, driver software from Renesas, turnkey software from 27M Technologies	
Hardware	Main PCB	
	Schematics	
	Layout and Gerbers	
Software	Renesas low level driver code, sample demo code	
Documentation	EMMA3SL2/LP device µPD6141x	R19PF0042ED0000
	Microcontroller 78K0/KB2	U17425EE1V0PL00
	Front End solutions for STBs	Tbd

Before purchasing or using any Renesas Electronics products listed herein, please refer to the latest product manual and/or data sheet in advance.

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