

MPEG-4 SD Hybrid DVR Solution

Based on EMMA3SL2/LP

Renesas Electronics' MPEG-4 hybrid Digital Video Recorder (DVR) 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.



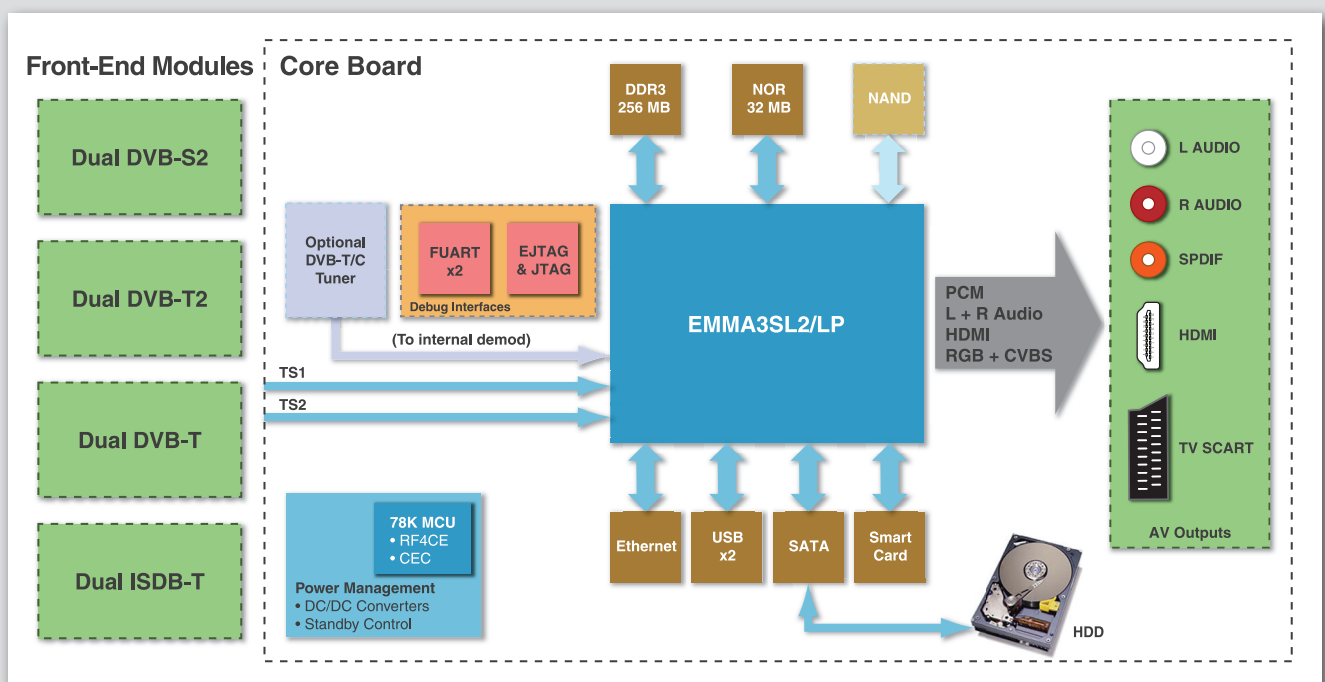
Applications

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 DVR with enhanced connectivity features. The reference design is based on the latest EMMA3SL2/LP MPEG decoder device manufactured in Renesas' low power 40nm process. The 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 or 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



Key Features

- Full function twin tuner DVR
- SD MPEG decoder EMMA3SL2/LP
- DVB-S2/T/T2 and ISDB-T front end modules
- HDMI 1.4 output with up to 720 ×576 resolution
- USB interfaces for external storage connection
- Ethernet port to support OTT services (optional)
- Low power operation
- Support for IR or RF4CE 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 (EMMA3SL2/LP)

- Processor Dual MIPS 4KEc CPU → 1200 DMIPS
3 transport stream demux
- MPEG-4 AVC, HP, MP L3.2, MPEG-4 ASP@L5,
DivX, max. resolution 720 x 576
- MPEG-2 MP@HL, 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 256 MB (128 MB, 512 MB option)
- Flash NOR (option 4 – 64 MB), NAND (option)

Low power

- Standby < 0.5 W (subject to quality of AC adaptor)
- Active 7 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 SCART RGB, CVBS, Audio
- 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 RF4CE 78F8058	R01PF0040ED0000
	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.

