

MPEG-4 HD Hybrid DVR Solution

Based on EMMA3SE/P

Renesas Electronics' MPEG-4 hybrid Digital Video Recorder (DVR) reference solution is a complete hardware and software platform based on the H.264 HD decoder EMMA3SE/P from Renesas. The platform includes smart card interface and is ready for CA integration.



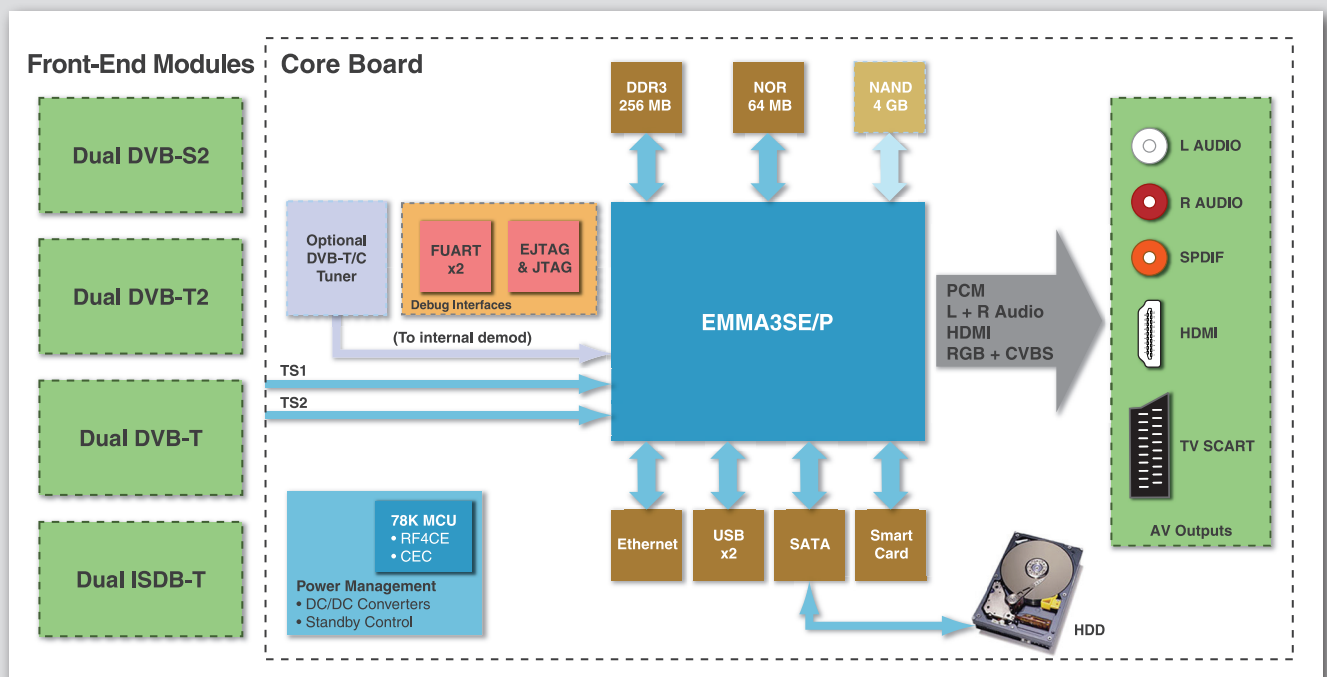
Applications

Renesas' reference design enables, in a short and secured time to market, the creation of cost, performance and power consumption optimised MPEG-4 HD hybrid DVR with enhanced connectivity features. The reference design is based on the latest EMMA3SE/P MPEG decoder device manufactured in Renesas' low power 40nm process. The solution incorporates the advanced security features of the EMMA3SE/P 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
- HD MPEG decoder EMMA3SE/P
- DVB-S2/T/T2 and ISDB-T front end modules
- HDMI 1.4 output with up to 1920 × 1080 resolution
- USB interfaces for external storage connection

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 1920 × 1080
- 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	EMMA3SE/P device μ PD6142x	R19PF0041ED0000
	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.

