# HDM-R1

*Driving the Digital Lifestyle*

## HDMI Receiver IP Core

DVD | Mobile | Digital TV | Imaging | IP Cores

Product Brief

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### Benefits Overview

Zoran's HDM-R1 is a silicon efficient, cost effective intellectual property core for IC designs requiring the HDMI Receive function. The HDM-R1 decodes the HDMI standard into high definition digital video formats (YCbCr or RGB) and multi-channel audio. High Definition Content Protection (HDCP) decryption is supported. HDM-R1 includes digital link, analog Phy and reference software to provide a complete solution for the HDMI Receive function. HDM-R1 is proven in silicon.

### Features

- HDMI version 1.1 compliant
- HDCP version 1.1 compliant
- Supports EIA/CEA 861b video formats including 480i, 480p, 576i, 576p, 720p, 1080i, and up to 1360 x 768
- Up to 8 channels uncompressed LPCM audio up to 192 kHz
- Pass through for compressed audio including Dolby Digital, MPEG-2, MP-3, etc.MPEG-2, MP-3, etc.
- HDCP authentication and link verification
- Audio clock regeneration
- Video format detection
- Color space conversion
- Audio mute
- Internal color bar & square wave generators
- Generic Host Bus Interface for core configuration and control
- Onboard debug and test support

### Digital Link and Analog PHY Solution

HDM-R1 is a complete solution including the digital link layer and analog Phy. Initially targeted to a TSMC 0.18 micron process, HDM-R1 can be ported to other popular processes.

### Reference Software

The HDM-R1 IP Core includes reference software which facilitates the implementation, verification and validation of the core. It can also be used as an example for further software system development. Provided as source code, the reference software is highly portable and can easily be adapted to any specific system.

The reference software consists of the following functions:
- Hardware configuration and system interface
- Authentication

### Integrated Circuit Applications

- LCD Display Processors
- Digital TVs
- Set-top boxes
- DVD recorders
- A/V Receivers
- Any IC requiring the HDMI receive function

### Deliverables

***Digital Link***

- Synthesizable RTL code (Verilog)
- Bit accurate C model
- Synopsis synthesis scripts
- Test bench with suite of test cases

***Analog Phy***

- GDS2
- CDL Netlist for LVS/DRC
- Verilog behavioural model (without timing)
- Synopsys .lib model
- Cadence .lef file (for integration and top level Place and Route).
- Cadence .tlf file (timing information for top level place and route)
- Layout recommendations/guidelines
- Package/PCB design recommendations

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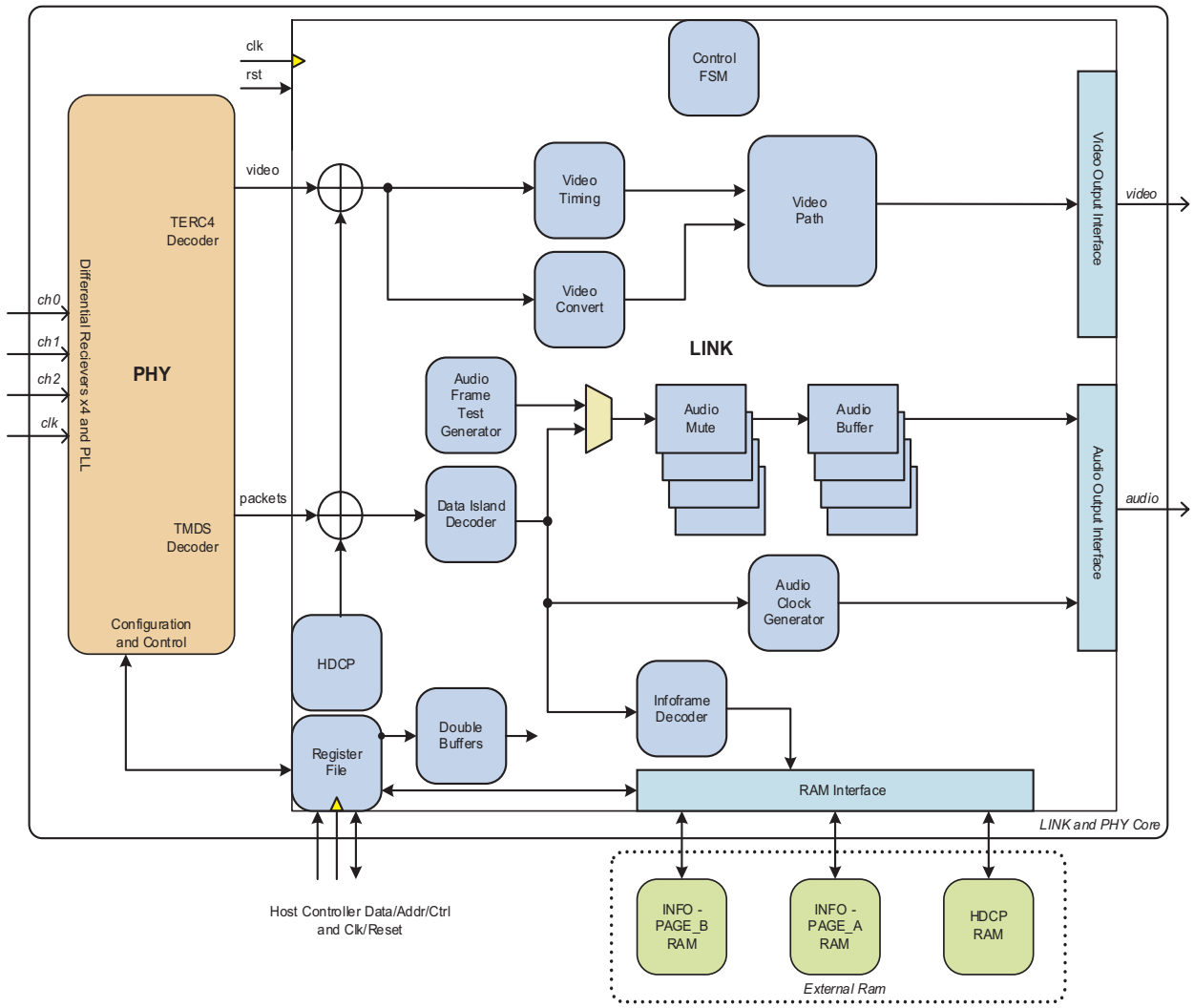
### HDM-R1 Block Diagram




### For more information, contact Zoran's Sunnyvale office or the office nearest you: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