Digital Entertainment

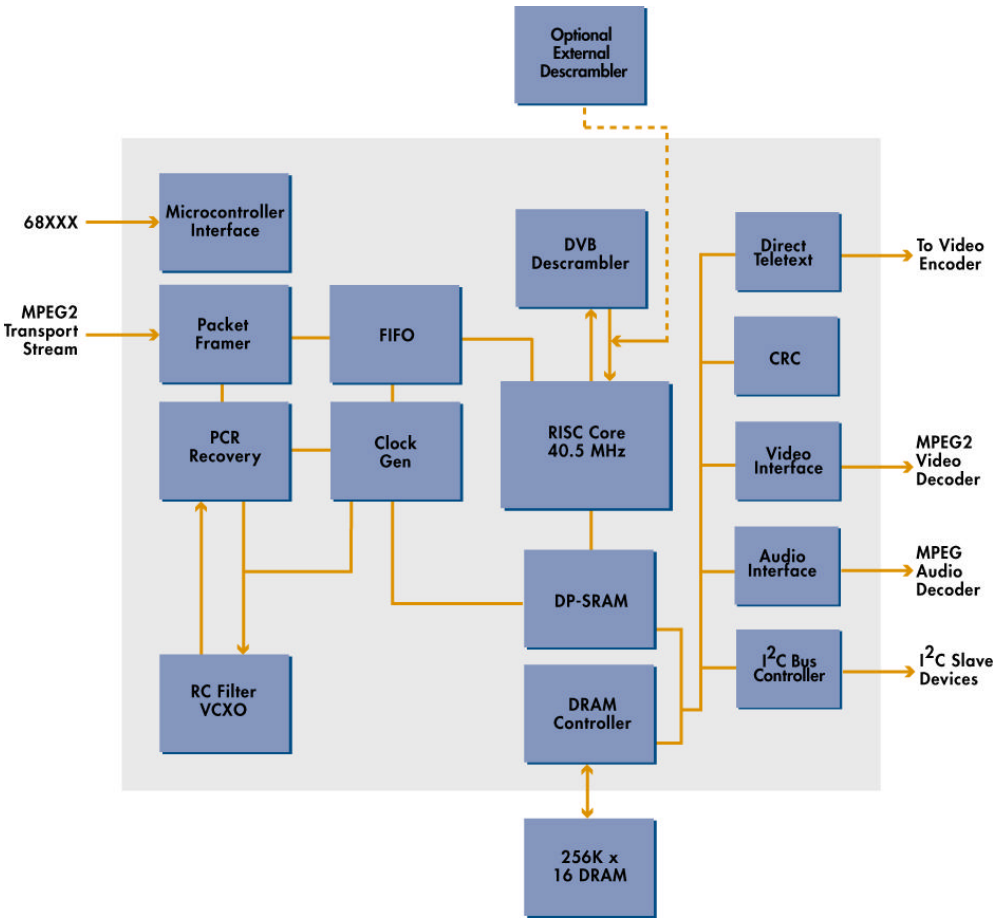
ViSTA VES2030

MPEG 2 Transport Demultiplexer Subsystem

OVERVIEW

The VES2030 MPEG 2 Transport Demultiplexer Subsystem is part of the VISTA™ family, (VLSI Integrated Set-Top Architecture). The VES2030 handles MPEG 2 transport streams and Packetized Elementary Streams (PES) of up to 60 Mbps, parses the streams to frame the MPEG 2 packets, and then routes the extracted packets to either an MPEG 2 video decoder, MPEG audio decoder, or to a host microcontroller for downstream processing. The VES2030 integrates the functionality of the VES0010 DVB descrambler supporting descrambling at both the transport level and the PES level. The device can descramble data on the fly and provides an 8 bit input and output bus between the RISC core and the descrambler block. The VES2030 also performs Program Clock Reference (PCR) recovery to maintain audio and video synchronization, acts as the DRAM controller for not only itself, but also for the host microcontroller and MPEG decoder, thus reducing overall system DRAM requirements and cost. The VES2030 comes with necessary firmware, and is packaged in a 208-lead MQFP package. Features also include a 32-bit Cyclical Redundancy Check (CRC) engine together with robust error handling with error source for interrupt status and interrupt mask. The VES2030 also provides direct teletext output.

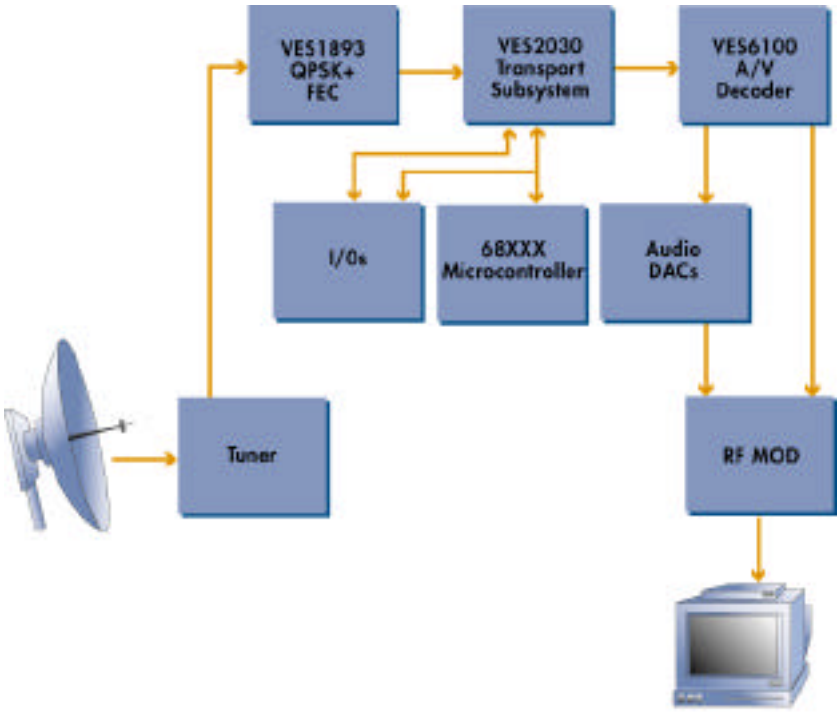
Block Diagram



FEATURES

- Accepts MPEG 2 system transport streams up to 60 Mbps
- Handles MPEG 2 transport and Packetized Elementary Stream (PES)
- Support for up to 32 PIDs
- Integrated high performance micro-programmable 40.5 MHz RISC
- Glueless interface to VES6100 and industry standard MPEG decoders
- Support for Motorola 68XXX microcontrollers
- Direct interface to VES1893 and VES1820 channel decoders
- Integrated Program Clock Reference (PCR) recovery
- Integrated DRAM controller
  - Functions as the memory controller for the host microcontroller
- Channel rate and extended channel rate buffering
- CRC Engine
- Direct Teletext Output
- DVB-complaint Descrambler
  - Compliance to DVB Common Scrambling Specifications
  - Handles transport level or PES level descrambling
  - New Common Key for each transport packet
- Lost packet detection and handling
- PTS, PSI, and CAS management
- EMM and ECM filtering
- I^2C Bus support
- 208 MQFP
- 0.5 µm CMOS

Typical Application



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