

## Low-cost set-top box decoder

DATA BRIEF

### DESCRIPTION

**STMicroelectronics** has developed two devices for low cost cable, satellite and terrestrial STBs. The STi5516 and STi5517 integrate more core STB functions into a single device than ever before, offering STB manufacturers the opportunity to build cost-effective solutions powered by devices from the leading supplier of MPEG-2 ICs.

Used with ST's established demodulator devices, the STi5516 and STi5517 form a complete chipset for low-cost STBs across all application areas.

The **STi5517** contains additional advanced features: it supports RGB16 graphics (with anti-flicker filtering) as an alternative image format for the OSD plane. With an integrated high-performance DMA engine, it is ideal for applications requiring high-resolution graphics.

The **STi5517** has built-in D1 and PCM input interfaces to allow the IC to be used in applications requiring legacy analog support.

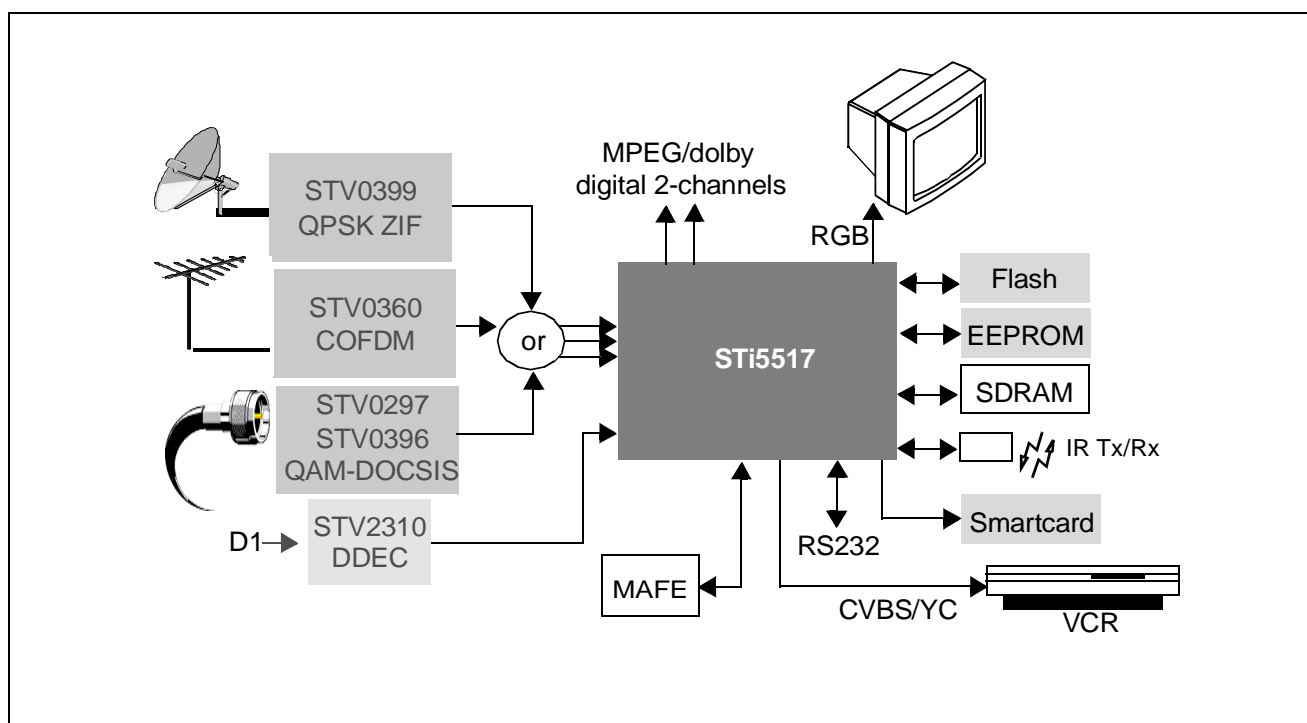
A common programme guide can then be used for both digital and analog services.

The **STi5517** has enhanced security features to help protect the integrity of set-top boxes against piracy.

**Figure 1. Package: PBGA 35 x 35 (388)**



**Figure 2. Typical Pay TV application with Modem Return Channel**



**FEATURES**

- 180 MHz 32-bit ST20 CPU
  - 8 Kbytes internal SRAM, 8 Kbytes of I-cache and 8 Kbytes of D-cache
- Integrated transport demultiplexer
  - DES, DVB and ICAM descramblers
  - Support for more than 48 PID slots
- MPEG-2 MP@ML video decoder
  - Fully programmable horizontal and vertical SRCs
- Audio features
  - MPEG-1 layers I/II decoding (MP3 option)
  - Dolby<sup>®</sup> Digital 5.1 down-mixed to 2 channels
  - Dolby<sup>®</sup> Pro Logic compatible
  - SRS<sup>®</sup> TruSurround<sup>®</sup> virtual surround sound
  - PCM audio input
- Integrated audio DACs
- Graphics/display
  - 5 display planes (background, video, still, OSD and cursor)
  - 2, 4 and 8 bpp CLUT graphics
  - RGB16 graphics
- PAL/NTSC/SECAM video encoder
  - RGB, CVBS, Y/C and YUV outputs with 10-bit DACs
  - Encoding of CGMS, teletext, WSS, VPS, closed caption
  - Macrovision 7.01 copy protection
- Interfaces
  - D1 input
  - POD and dual DVB common interface
  - 5 ASCs (UARTs) with Tx and Rx FIFOs
  - 6 x 8-bit banks of parallel I/O
  - 2 smartcard interfaces and clock generators
  - 4 PWM channels
  - Multichannel IR transmitter/receiver
  - Low power/RTC/watchdog controller
- Package PBGA 35 x 35 (388)

**PART NUMBERING****Table 1. Order codes**

Part Number	Description
STi5517ZUA	Development version, all options
STi5517AUA	Basic DVB

**REVISION HISTORY****Table 2. Revision history**

Date	Revision	Description of Changes
October-2004	1	First issue

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