

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.

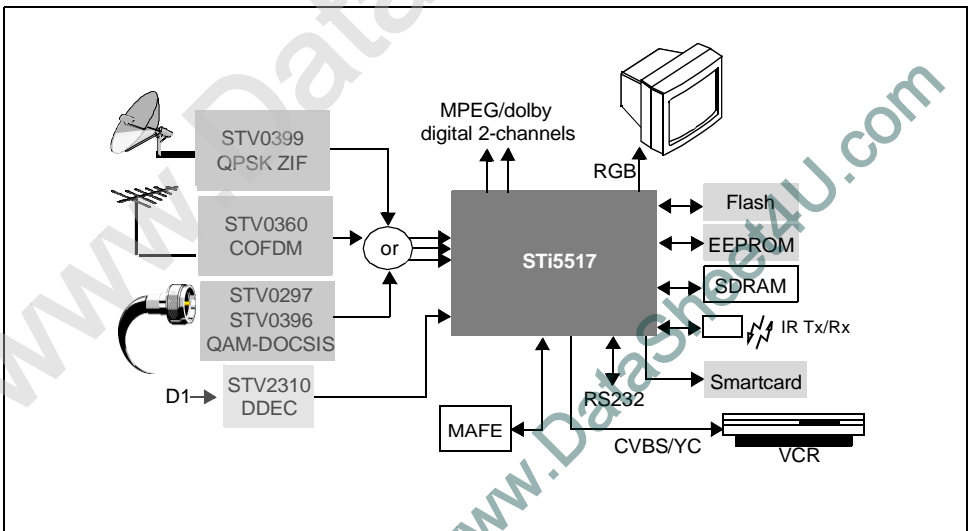
A common programme guide can then be used for both digital and analog services.

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[®] Digital 5.1 down-mixed to 2 channels
 - Dolby[®] Pro Logic compatible
 - SRS[®] TruSurround[®] 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

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics.
All other names are the property of their respective owners

© 2004 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com