

QPSK DVB/DIRECTV® direct conversion tuner IC

DATA BRIEF

DESCRIPTION

The SATi5516 decoder and demodulator combines the features of ST's successful STi5516 and STV0299 chips into a single device.

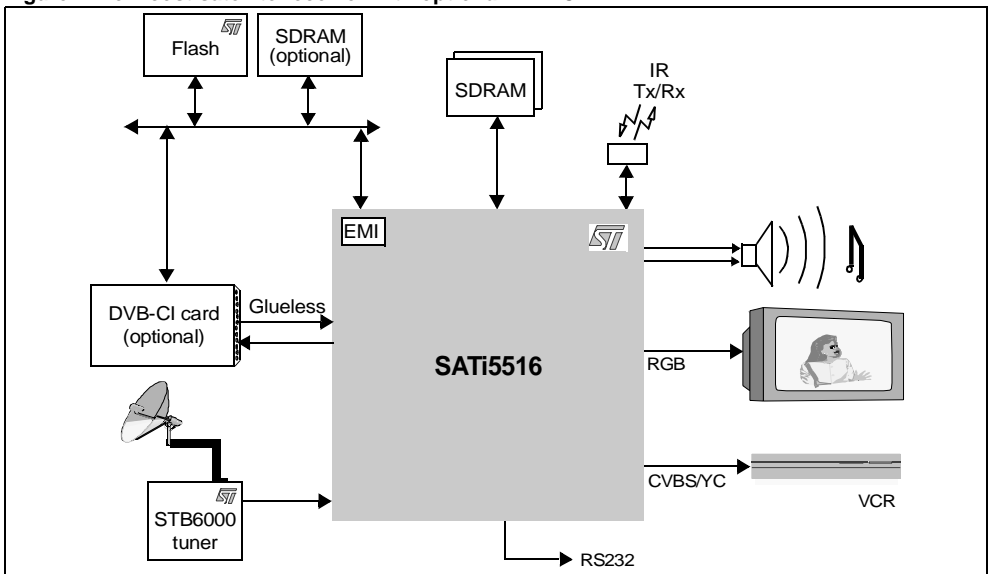
Software is binary compatible between these two devices and the SATi5516, ensuring that minimal engineering effort is required to take advantage of the cost benefits of the new chip. Requirements for pay-TV services are met by an industry standard DVB-CI interface.

The STB6000 direct conversion silicon tuner completes ST's product range for satellite set-top boxes. This device features a low-noise amplifier, down-converting mixers, baseband low-pass filters and on chip voltage control oscillator. The STB6000 is connected to the SATi5516 via a glueless interface to minimize overall system costs.

Figure 1. Package (416 pin PBGA)



Figure 2. Low-cost satellite receiver with optional DVB-CI



FEATURES

- DVB-S and DIRECTV[®] compliant demodulator
 - Rapid data acquisition
 - Channel bit rate up to 90 Mbps
 - Symbol frequency rate 1-45 Msymbols/second
 - DiSEqC interface
- Enhanced ST20 32-bit VL-RISC CPU
 - 180 Mhz, 8 Kbyte instruction cache, 8 Kbyte data cache and 8 Kbyte SRAM
- Shared memory interface
 - 121 Mhz, 16-bit wide SDRAM interface, 64 and 128 Mbit support
- Programmable transport interfaces (PTI)
 - Integrated DES-ECB, DVB and ICAM descramblers
 - Low-cost DVB-CI interface
- MPEG-2 MP@ML video decoder
 - Greater than 2x decoding speed
 - Trick modes including smooth fast-forward and rewind
 - Fully programmable horizontal and vertical SRCs
- Graphics/display
 - 5 display planes with RGB16 support
- PAL/NTSC/SECAM video encoder
 - RGB, CVBS, Y/C and YUV outputs with 10-bit DACs
 - CGMS, Teletext, WSS, VPS, closed caption
- Audio subsystem
 - MPEG-1 layers I/II decoding (MP3 option)
 - Dolby[®] Digital 5.1 down-mixed to 2 channels
 - Dolby[®] Pro Logic compatible output
 - SRS[®] TruSurround[®] virtual surround sound
 - PCM mixing and sample rate conversion
 - IEC958/IEC1937 digital audio output interface
 - Integrated stereo audio DAC system
- Interfaces
 - 5 ASCs (UARTs) with Tx and Rx FIFOs
 - 6 x 8-bit banks of parallel I/O
 - 2 smartcard interfaces and clock generators
 - 2 SSCs for I²C master/slave interface
 - 4 PWM channels
 - Multichannel IR transmitter/receiver
 - Modem analog front-end interface
 - Low power/RTC/watchdog controller
- Package 416 pin PBGA

PART NUMBERING

Table 1. Order Codes

Part Number	Description
SATI5516AUA	Basic SATI5516

REVISION HISTORY

Table 2. Revision History

Date	Revision	Description of Changes
September-2004	1	First issue

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