



# STi5197 STi5197L

## Cost-effective QAM demodulator and MPEG2 decoder for SD set-top box applications

Data brief

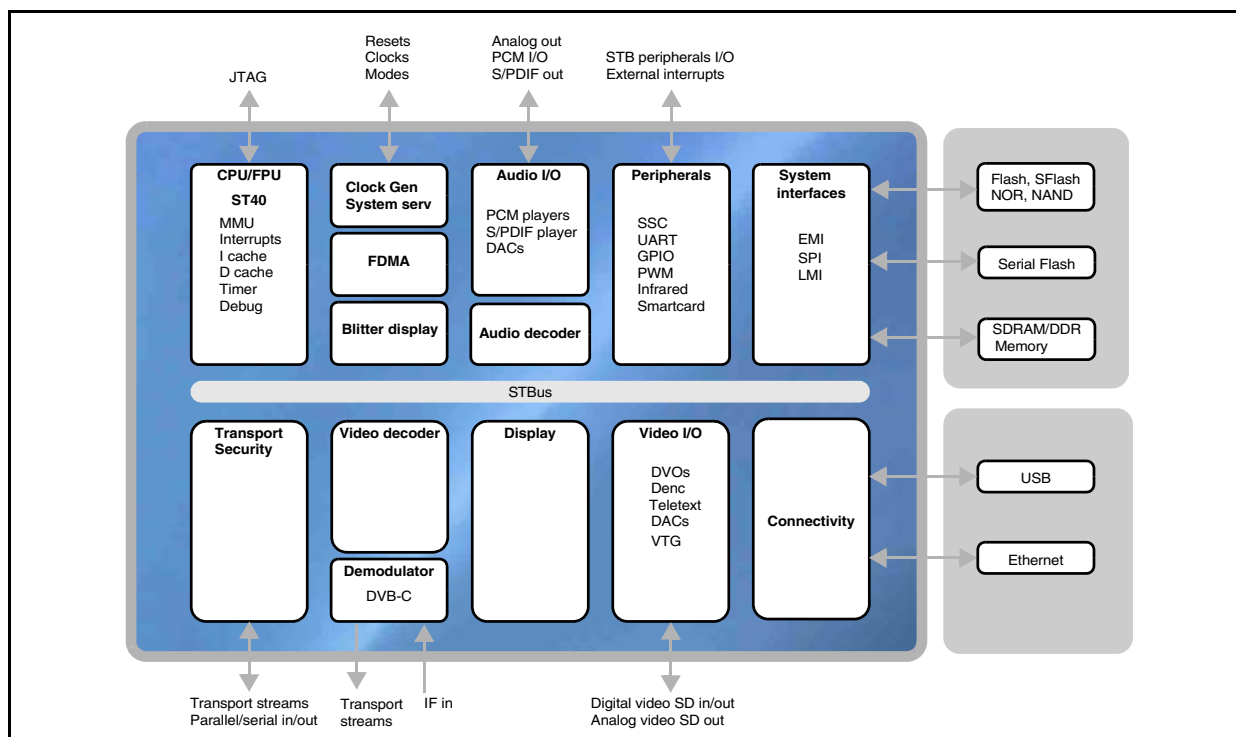
### Features

- ITU-T J83 Annexes A/B/C, DVB-C compliant
- 256 QAM demodulation and FEC sub-system
- MPEG2 MP@ML video decoding
- Audio decoding (MPEG1, 2, MP3, Dolby Digital 5.1)
- Linux and OS21 compatible ST40 applications CPU
- 16-bit SDR/DDR1 compatible local memory interface
- Multi-stream, DVR capable, transport stream processing
- Extensive connectivity (USB 2.0 host/ULPI, Ethernet MAC MII/RMII, DVB-CI)
- Cable STBs can be produced with very small BOM and two-layer PCBs
- Active and passive low power modes
- Integrated voltage regulator

### Description

The STi5197 integrates in a single IC, QAM demodulation, FEC, Multi-stream transport demultiplexing, an applications CPU, audio/video decode, video processing, graphics and display, STB peripherals, audio/video DACs, digital audio/video outputs, USB 2.0 host controller/ULPI and an Ethernet MAC MII/RMII.

The STi5197L is a feature-optimized variant for Asian markets.



# 1 Introduction

The STi5197 uses state-of-the-art process technology to provide an ultra low cost, full featured, SD set-top box SoC. It is a highly integrated solution combining QAM demodulation, audio/video decoding and applications processing into a single chip, suitable for MPEG2-based Cable networks worldwide.

The STi5197 provides a solution for operators to specify a range of low cost SD STBs including low cost Zappers, Interactive STBs and DVR-capable STBs, with content delivery using broadcast or broadband networks, or both (Hybrid STBs).

The STi5197 is optimized for secure Pay-TV applications with integrated DVB, DES, Multi2 and ICAM descramblers and smartcard interfaces.

The STi5197 offers enhancements in performance, features and integration to current users of ST's MPEG2 SD family of audio/video decoders and QAM demodulators, whilst reducing cost and time-to-market for the next generation of deployments. Few external components are required to realize a complete STB solution, resulting in very low BOM cost.

| Features                                                                         | Benefits                                                                                                                                            |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Combines a configurable QAM demodulator with STB decoding and display functions. | This highly integrated SoC helps to reduce board area and manufacturing cost, allowing low-cost, small-size STBs to be designed for DVB-S networks. |
| ST40 applications CPU, 32K I cache, 32K D cache.                                 | Superscalar performance from a single CPU core, using standard tools and operating systems (Linux, OS21).                                           |
| STMicroelectronics' video decoding system with Blitter display.                  | Allows dual SD decoding of MPEG2 video with PIP capability.                                                                                         |
| Integrated USB 2.0 host, Ethernet MAC with MII/RMII.                             | Enables connectivity to HDD for PVR systems and to Ethernet networks for IP TV and hybrid/IP STBs.                                                  |
| Low power process, design and architecture.                                      | Low operating power consumption.<br>Best in class, low-power standby mode. Fast resume from standby.                                                |
| Available in 15x15 package with ballout optimized for 2-layer PCBs.              | Reduced board manufacturing costs and board size.                                                                                                   |
| Support for Serial Flash including secure boot.                                  | Allows low cost BOM, and safeguards boot code integrity.                                                                                            |

## 2 Revision history

**Table 1. Document revision history**

| Date        | Revision | Changes                                                                                                 |
|-------------|----------|---------------------------------------------------------------------------------------------------------|
| 05-Mar-2009 | 1        | Initial release                                                                                         |
| 30-Jul-2009 | 2        | New cover graphic applied. Table 1 amended. Features/benefits added to page 2. Removed TSMF references. |
| 23-Mar-2010 | 3        | Content simplified. STi5197L information added to front cover.                                          |

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