

## Single module demodulator and decoder IC for digital video set-top boxes

DATA BRIEF

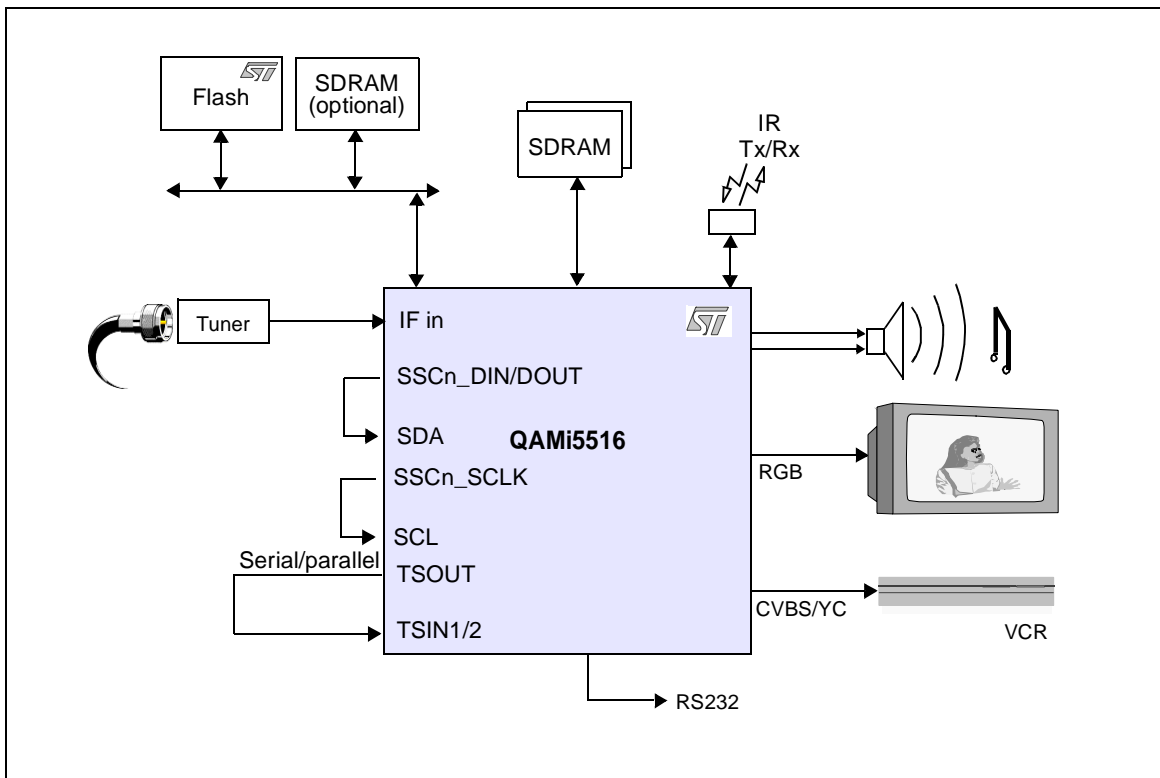
### Description

The QAMi5516 is an integrated demodulator/decoder solution for digital cable receivers for compressed video, sound and data services. A QAM demodulator performs IF to MPEG-2 block processing of QAM carriers. The demodulated stream is then processed by video and audio decoders using standard Omega technology.

The QAMi5516 contains all of the most commonly used descramblers, and thus allows a single platform to be developed to cover the entire mainstream set-top box market (USA, Europe, Asia)



**Application:** Highly cost-effective solution for digital cable set-top boxes



## Features

- **Decodes ITU-T J.83-Annexes A/B/C and DVB-C bitstreams**
- **Integrated high performance ADC**
- **Support for 4-, 16-, 32-, 64-, 128-, 256-point constellation variable symbol**
- **Rate from 0.87 MBaud to 11.7 MBaud**
- **Robust integrated adaptative equalizer**
- **I<sup>2</sup>C serial bus and I<sup>2</sup>C repeater**
- **Lock time <100ms**
- **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 8bpp CLUT 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

- CableCard 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

## ■ Module features

- Low power consumption (~1500 mW)
- Package: 27 x 27 mm 416 PBGA, 1 mm pitch

## Ordering information

Device number	Description
QAMi5516AUA	Integrated cable demodulator/decoder
CBR1300	Development platform for QAMi5516

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