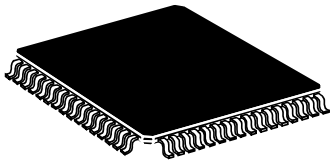
STV0367

Low-power and ultra-compact combo DVB-T/C single-chip receiver

Data brief

Features

- Combined DVB-T/-C receiver
  - DVB-T demodulation
  - DVB-C demodulation
  - I²C serial bus interface
- Compatible with low- to high-IF tuners
- Flexible clock management
- ADC for RF signal strength indicator
- Flexible and DVB-CI compliant TS output
- Ultra-compact TQFP64 package



64-pin TQFP 7 x 7 mm^2 package
with exposed pad down

Description

The STV0367 inherits the functionality of the industry-leading enhanced STV0362 terrestrial and STV0297E cable demodulators in one single advanced combo receiver.

The STV0367 COFDM section of the receiver is fully compliant with the DVB-T standard framing structure, channel coding and modulation. The symbol, timing and carrier recovery loops are completely digital and tailored to comply with state-of-the-art RF down-converting tuner devices.

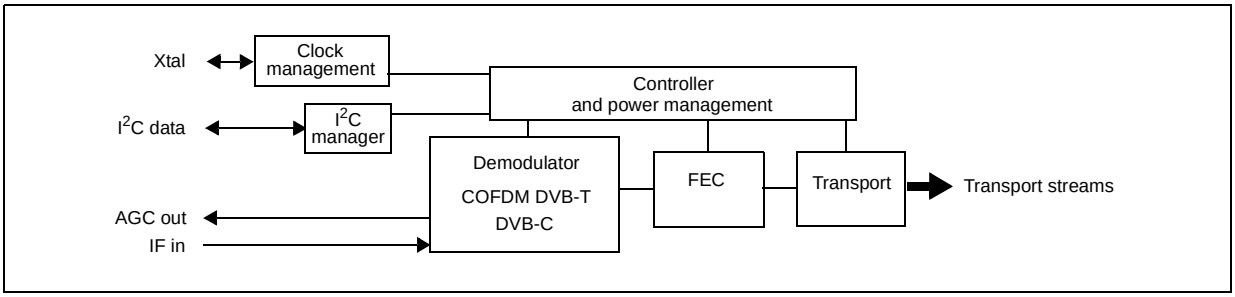
The STV0367 DVB-C section is a complete QAM (quadrature amplitude modulation) demodulation and FEC (forward error correction) solution that performs IF-to-transport stream block processing of QAM signals.

The demodulator provides error-corrected MPEG transport-stream outputs which can be routed to the transport sub-system.

Table 1. Device Summary

Order code	Temperature range	Package	Packaging
STV0367B	-10 to 85 °C	TQFP64 EPD	Tray

Figure 1. STV0367 block diagram



1 Introduction

Intended mainly for use in iDTV sets and set-top boxes for the expanding European and Asian markets, the STV0367 combines in one single digital receiver chip, all the legacy of the popular and market-proven STV0362 and STV0297E devices.

The design of the STV0367 is optimized, in terms of cost and performance, for the most advanced CAN tuners and silicon tuners available on the market and is compliant with both DVB-T and DVB-C standards.

The STV0367 provides all demodulation and FEC functions required for the recovery of DVB-C bitstreams with outstanding BER results. In addition, it includes several features that give simple and immediate access to various quality and status monitoring parameters. It is intended for the digital transmission of compressed television, video, sound, and data services over cable and is fully compliant with ITU-T J.83 Annexes A/C or DVB-C specification bitstreams.

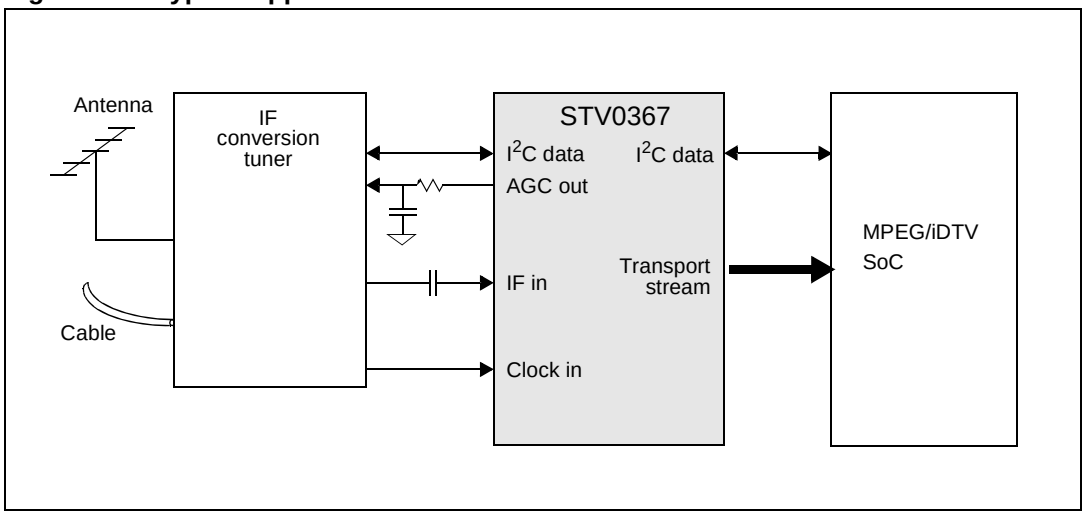
For terrestrial DVB-T networks the STV0367 embeds robust algorithms to cope with multiple interference sources as well as impulse noise effects. The channel equalizer is capable of static and dynamic echo cancellation even in severe urban environments. The embedded algorithms are enhanced to cope with out-of-guard interval echoes. Furthermore, specific channel quality monitoring is available for acquisition and survey.

The RF signal level is monitored by a dedicated single-ended 8-bit ADC. The RF power can be left under the control of the tuner, or it can be derived from the baseband power using a dedicated power-split algorithm. If required, the tuner serial I²C bus can be isolated using the STV0367 I²C bus repeater.

The STV0367 handles a wide range of symbol rates, ranging from the highest practical rates to rates as low as 0.87 Mbaud, even when there is a significant frequency offset.

Features	Benefits
Combines a configurable DVB-C/DVB-T demodulator with STB decoding and display functions.	This highly integrated SoC helps to reduce board area and manufacturing cost, allowing low cost and small size STBs to be designed for either DVB-C or DVB-T networks.
AGC derived from IF or demodulated signal.	Flexible AGC for different signal environments.
Low-power process, design and architecture.	Best-in-class, low-power standby mode, to meet emerging energy standards for STBs. Clock-rate management and improvements in channel acquisition efficiency enable a power-efficient standby mode.
Includes full suite of low-level drivers and application software, detailed user manuals and reference design schematics.	Enables fast and seamless integration in complex digital TV systems such as iDTV, set-top boxes or PCTV dongles.

Figure 2. Typical application



2 Revision history

Table 2. Document revision history

Date	Revision	Changes
02-Sep-2011	1	Initial release.

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