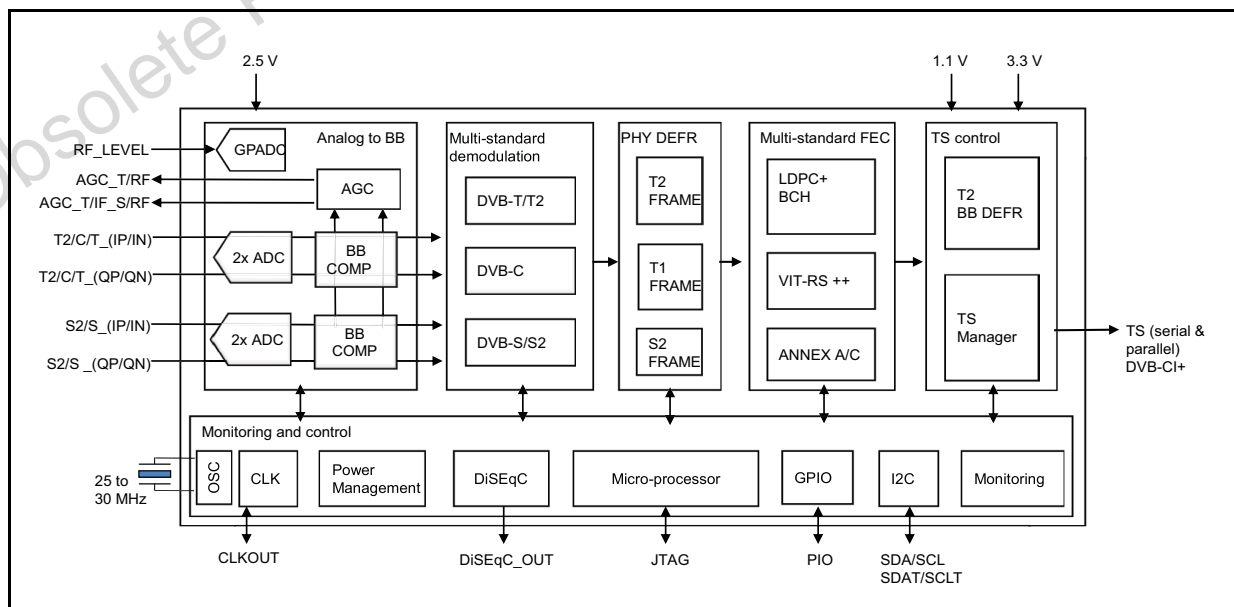# STV0368

Low-power combo DVB-T/T2/C/S/S2 single-chip receiver

Data brief

Features

- DVB-T2 demodulation:
  - Compliant with ETSI EN302755
  - DTG v7 and Nordig Unified v2.3 compliant
  - 1.7, 5, 6, 7 and 8 MHz normal and extended BW signals supported
  - GS streams, FEF and MISO supported
  - TFS not supported
- DVB-T demodulation:
  - Compliant with ETSI EN300744
  - DTG v7 and Nordig Unified v2.3 compliant
  - 6, 7 and 8 MHz BW supported
- DVB-C demodulation:
  - Compliant with ETSI EN300429
  - Nordig Unified 2.3 and SARFT compliant
  - Up to 7.2 Ms/s symbol rate
- DVB-S and S2 demodulation:
  - Compliant with ETSI EN300421 and EN302307
  - Symbol rates from 1 to 45 Ms/s.

- Enhanced FEC for DVB-S and DirecTV legacy transmissions
- DVB-T/T2 and DVB-C compatible with zero-, low- and legacy-IF tuners (can or silicon)
- DVB-S/S2 compatible with zero-IF tuners (can or silicon)
- Embedded microcontroller (DVB-T2 task sequencing by firmware and monitoring)
- ADC for RF signal strength indicator
- Flexible clock management for advanced power saving
- JTAG and I²C serial bus interfaces
- Advanced low-power CMOS process (40 nm)
- 3.3-V, 2.5-V and 1.1-V power supplies with internal SMPS for 1.1-V generation
- Typical power consumption 800mW (UK profile DVB-T2 mode)
- TQFP80 10x10x1 mm^3 package with EPD

For further information contact your local STMicroelectronics sales office.   www.st.com

Description

The STV0368 is a single-chip DVB-T, T2, C, S and S2 demodulator.

Operation is exclusive in that only one signal (standard) can be processed at any time.

The DVB-T2 demodulator features microcontroller assisted operation enabling the fast tracking and response times demanded by the T2 standard. For the T, C, S and S2 standards, where the demands for immediate response are much lower, classical software control from the host processor has been implemented. Even though the silicon implementation is highly optimized, allowing each standard to share common hardware blocks, effort has been made to maintain a common look and feel with the ST established product line. This allows users who are familiar with the ST products STV0367, STV0297E and STV0913 to familiarize themselves quickly and eventually optimize the drivers as necessary. Optimization of the T2 microcode requires additional compilers which are, for the moment, supported exclusively by ST.

The DVB T, T2 and C demodulators share a common input which may be operated in ZIF mode or in IF mode. Silicon as well as traditional CAN tuners are supported through a flexible IF/baseband interface with IF/BB AGC and I^2C control

A separate input is implemented for the DVB-S and S2 demodulators. The ST single-channel tuner range is fully supported. Furthermore, the flexible ZIF IQ inputs, RF AGC and I^2C allow the use of third-party tuner solutions when required.

Features	Benefits
Combines a configurable DVB-T2/T/C/S/S2 demodulator.	Helps to reduce board area and manufacturing cost, allowing low-cost and small-size STBs to be designed for DVB-C, DVB-T and DVB-S networks.
AGC derived from IF.	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.
Wide-range carrier tracking loop for large offsets recovery.	Optimizes adjacent channel interference performance.
Out-of-guard interval echoes compatible.	Robust channel acquisition.
High-performance digital carrier, timing and symbol recovery loops.	Allows the customer to use standard crystal oscillators.
Integrated DiSEqC, crystal oscillator	Low count BOM

Figure 1. Typical applications diagram for DVB-S2/T2/C
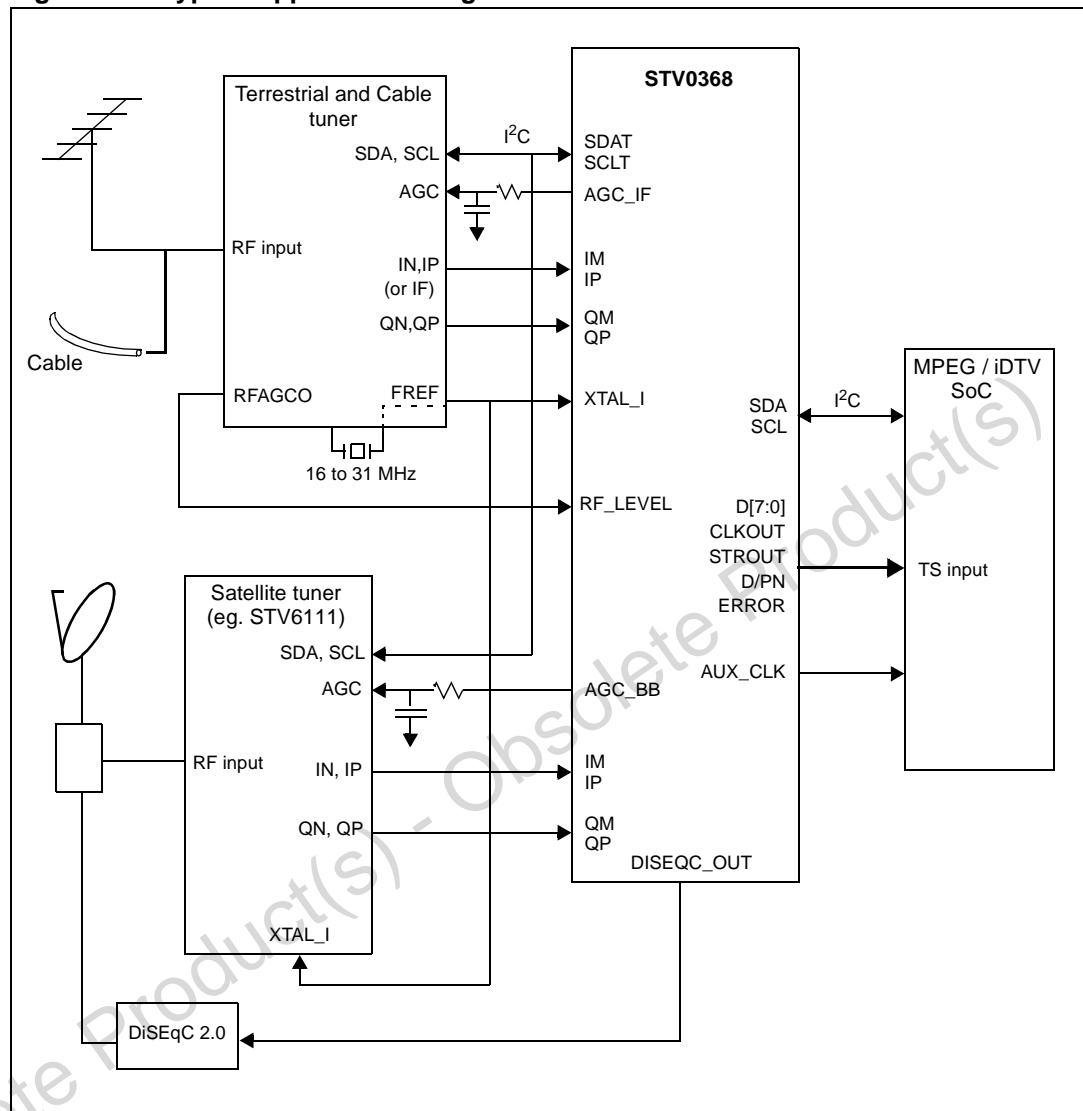
Ordering information

Table 1.   Device summary

Order code	Temp range, °C	Package	Packing
STV0368B	0 - 70 °C	TQFP80 EPD	Tray
STV0368BT	0 - 70 °C	TQFP80 EPD	Tape and reel

Revision history

Table 2.   Document revision history

Date	Revision	Changes
02-Aug-2012	1	Initial release.

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY TWO AUTHORIZED ST REPRESENTATIVES, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER'S OWN RISK.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

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

STMicroelectronics group of companies

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

www.st.com