STV0913

Multi-standard advanced demodulator for satellite digital TV broadcast set-top boxes
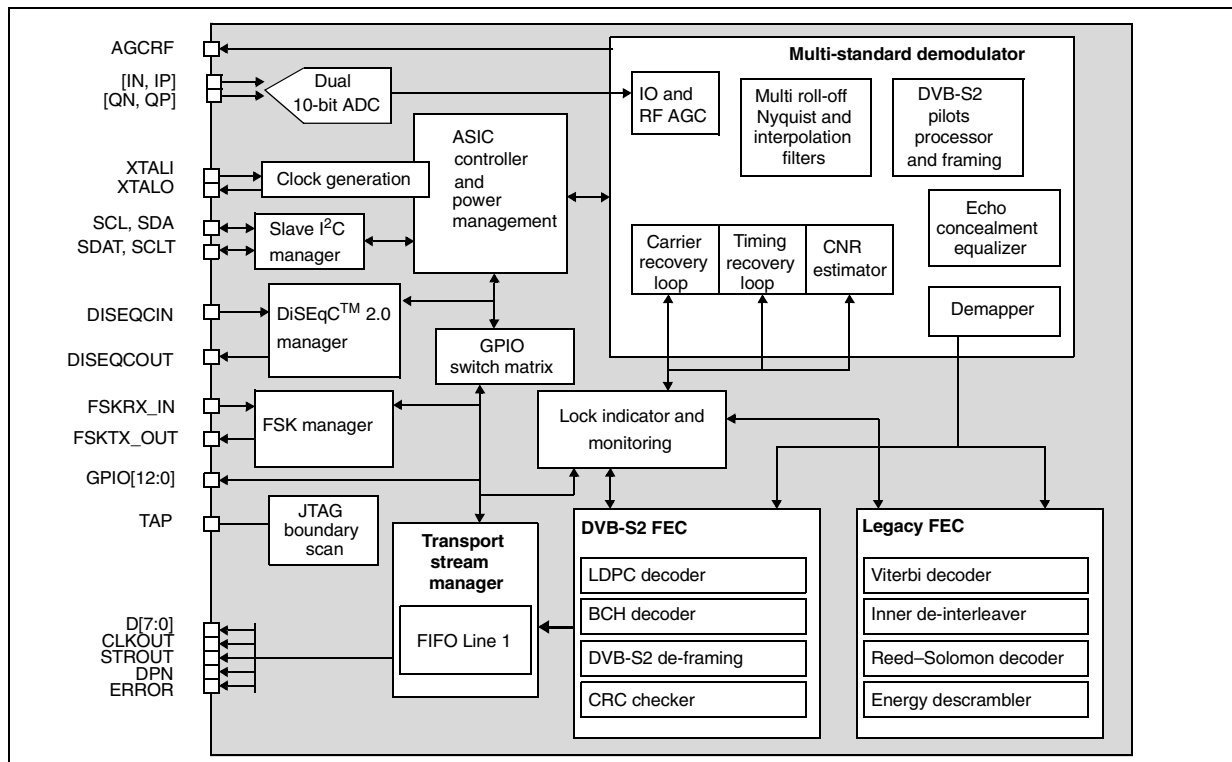
Data brief

Features

- Multi-standard demodulation
    - DVB-S2 QPSK and 8PSK
    - Legacy DVB-S and DirecTV[TM] QPSK
    - Multi-tap equalizer for RF reflection removal
    - Wide range carrier frequency tracking loop for offset recovery
- Multi-standard decoding
    - DVB-S2 FEC and framing
    - Up to 135 Mbit/s channel bit rate
    - DVB-S or DirecTV[TM] legacy
- Interfaces
    - Data to MPEG decoder
    - DVB common interface compliant
    - I²C serial bus interface, including private repeater for tuner
    - JTAG interface for boundary scan
    - DiSEqC 2.x 22-kHz interface
    - FSK interface
    - Flexible GPIOs and interrupts
    - Bit error rate monitoring and reporting
- Technology
    - Multi supply: 1.1-V core, 2.5-V analog, 3.3-V digital interfaces
    - Fine grained power management
    - LFBGA-77 8 x 8 mm² package, RoHS

Description

The STV0913 is a cost-effective, high-performance demodulator/decoder for DVB satellite reception. The device supports DVB-S2 in QPSK and 8PSK as well as DVB-S and DirecTV[TM] legacy transmission standards.

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Overview

The STV0913 is intended for use with zero IF balanced IQ tuners (I, IB, Q, QB) with RFAGC level control and I^2C register control. The demodulator is capable of processing DVB-S2, DVB-S and DTV legacy signals.

The STV0913 integrates all the features needed to provide a low-cost broadcast satellite receiver solution including: integrated crystal oscillator, DiSEqC controller, tuner I^2C repeater, FSK modem, ancillary DACs and ADCs and many unattributed general purpose input/output ports for peripheral control.

Advanced power saving features have been implemented, the LDPC stops once the solution is sufficiently converged and the various blocks of the IC (demodulator, LDPC, Legacy FEC, and so on) may be completely shut down if not required.

Features	Benefits
Multi-standard demodulation and decoding.	Allows an advanced set-top box or receiver to be compatible with multiple markets and legacy installations and so assists migration to the advanced services.
Multi-tap equalizer.	Improves reception in poor RF group-delay and reflection conditions (narrow transponders, SMATV installations, poor connectors, unterminated branched cables).
DVB common interface compliant.	Allows interface to DVB-CI+ module for decoding encrypted content.
I^2C serial bus interface, including private repeater for tuner.	Private repeater isolates the (sensitive) RF tuner from potential digital noise from the host processor.
Fine-grained power management.	Allows power to be reduced according to usage and standby strategy.
Best-in-class, low-power standby mode.	To meet emerging energy standards for STBs.
Integrated DiSEqC 2.x 22-kHz and FSK interfaces.	Reduces BoM cost whilst maintaining flexibility in antenna control.
JTAG interface for boundary scan.	Allows simple and thorough board testing in production.

Revision history

Table 1. Document revision history

Date	Revision	Changes
05-Dec-2012	1	Initial release.

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