Advanced dual demodulator for satellite digital-TV set-top boxes

Enables cost-effective HDTV watch and record

STV0900: Dual DVB-S2 demodulator

The DVB-S2 standard, with its 30% improvement on legacy channel capacity, has successfully been deployed by many major satellite operators. The channel gains combined with the coding gains of H.264 have demonstrated the viability of HDTV via satellite. HD is now taking significant and increasing market-share, and consumers are demanding more complete feature sets at an affordable price.

STMicroelectronics helps meet this demand with the STV0900, an advanced dual satellite demodulator that significantly reduces the cost, footprint and power consumption for advanced satellite DVR, dual-TV and picture-in-picture applications.

Dual DVB-S2 and legacy demodulation and decoding

The STV0900 is fully compliant with DVB-S2 recommendations for broadcasting services.

This device implements two multi-standard demodulators which are capable of processing DVB-S2 as well as legacy DVB-S/DSS signals.

The demodulators feed a single, multiplexed LDPC when decoding DVB-S2 signals.

For legacy signals, parallel Viterbi/Reed-Solomon FECs are provided.

The decoded data is handled by a flexible output-stream combiner which provides serial and parallel ports.

All the supporting circuits for a truly cost-effective BOM are integrated, including an integrated crystal oscillator, external clock for back-end processor, 2x DiSEqC controllers, FSK modem, DACs, ADCs and GPIOs.
Features

- Exposed pad LQFP 128 14 mm x 14 mm, 0.4 pitch
- Low power consumption < 1.5 A
- Enhanced power-saving features
- CMOS 80 technology
- Dual multi-standard demodulation
- DVB-S2, DVB-S and DSS
- Dual mode symbol rates
  - DVB-S2
    - 8PSK to 31 MSPS
    - QPSK to 47 MSPS
    - DVBS/DSS to 45 MSPS
- Automated acquisition process
  - Automatic IQ-inversion detection
  - Automatic false-lock detection
  - Full-band blind scan
- 2x tuner serial buses for improved isolation
- Flexible tuner interface
- Dual DiSEqC
- FSK modem
- Integrated crystal-oscillator driver
- Buffered reference-clock output for back-end processor
- Ancillary DACs, ADCs, GPIOs and interrupts

Hardware and software development tools

To minimize design efforts and time to market, ST provides a complete reference design which includes:

- Dual NIM board
- Power supply and connectivity board
- Software
  - Graphical user interface
  - Low-level application drivers

The STV0900 reference design can also be plugged to back-end reference platforms, facilitating overall platform software development.