

DVB-S2 (Digital Video Broadcast - Satellite 2nd Generation) is an ETSI standard of the second generation for digital data transmission via satellites. It was published in 2005, being the first standard of the second generation DVB standards (DVB-S2/-T2/-C2). Because of its capacity-approaching forward error correction, today DVB-S2 is the de-facto standard in satellite communication and other applications.

The Creonic DVB-S2 high performance demodulator performs all tasks of an inner receiver. The demodulator expects the quantized, complex baseband samples from an analog-digital-converter (ADC) and recovers timing, frequency and phase of the complex mapped symbols. In addition the core handles PL frame recovery and PL de-framing. The output of the demodulator perfectly fits the Creonic DVB-S2 forward error correction IP core that implements LDPC and BCH decoding.

Benefits

- Contains radio interface, decimator, timing recovery, equalizer, frame acquisition, and carrier recovery.
- Performs and supports spectrum inversion, DC offset correction, I/Q imbalance correction, decimation, coarse frequency estimation, timing recovery, matched filtering, downsampling, frame synchronization, PL descrambling, fine frequency correction, phase correction, automatic gain control, and PL deframing.
- Low-power and low-complexity design.
- On-the-fly configuration.
- Very fast synchronization due to different sets of filter coefficients for acquisition and tracking mode.
- Configurable interrupts and output of synchronization status information.
- AXI4-Stream handshaking interfaces for seamless integration.
- Perfectly fits to the Creonic DVB-S2 LDPC/BCH decoder.
- Available for ASIC and FPGAs (Xilinx, Altera).



Features

- Compliant with ETSI EN 302 307 V1.2.1 (2009-08) (DVB-S2)
- Supports CCM mode for broadcasting. ACM and VCM modes will be available soon.
- Support for short and long blocks (16,200 bits and 64,800 bits)
- Support for QPSK and 8-PSK modulation schemes. 16-APSK and 32-APSK will be available soon.
- Output of XFECFRAMEs for further processing.

Applications

- Satellite communication
 - Digital Video Broadcasting
 - Interactive Services
 - Professional Services
 - News Gathering

Deliverables

- VHDL source code or synthesized netlist
- HDL simulation models
- Bit-accurate Matlab, C or C++ simulation model
- Comprehensive documentation

Related Products

[DVB-S2 LDPC and BCH Decoder](#)

[DVB-CID Modulator](#)

[DVB-RCS2 Turbo Decoder](#)

[DVB-RCS Turbo Decoder](#)

[DVB-C2 LDPC and BCH Decoder](#)

About Creonic

Creonic is an ISO 9001:2008 certified provider of ready-for-use IP cores for several algorithms of communications such as forward error correction (LDPC and Turbo coding), synchronization, and MIMO. The company offers the richest product portfolio in this field, covering standards like DVB-S2X, LTE-A, DVB-RCS2, DOCSIS 3.1, CCSDS, WiFi, WiGig, and UWB. The products are applicable for ASIC and FPGA technology and comply with the highest requirements with respect to quality and performance. For more information, please visit www.creonic.com.

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