

Creonic provides IP cores for DVB-RCS2, in particular demapper, turbo decoder and this modulator.

DVB-RCS2 Modulator

The Creonic DVB-RCS2 high performance modulator performs all tasks of a Modulator. The modulator expects PDU frames as input and performs energy dispersal, CRC encoding, turbo encoding, mapping, framing and modulation. In addition, the core performs baseband filtering and output gain adjustment. The output of the core is designed to be followed by a DAC.

Benefits

- Easy-to-use AXI4-Stream handshake interfaces (data input and output).
- AXI4-Lite interface for gain configuration and retrieval of status information.
- Provides filtered and gain-adjusted baseband signal.
- The modulator comprises of scrambler (energy dispersal), CRC encoder, turbo encoder, framer, bit mapper, baseband filter (roll-off 20%), and gain adjustment.
- Frame-to-frame configuration of waveform ID.
- Low-power and low-complexity design.
- Available for ASIC and FPGAs (AMD Xilinx, Intel, Microchip).



Features

- Compliant with DVB-RCS2
- Support for Pi/2-BPSK, QPSK, 8-PSK, and 16-QAM
- Support for all linear burst modulation waveforms specified in Annex A
- Output baseband-filtered and gain adjusted samples

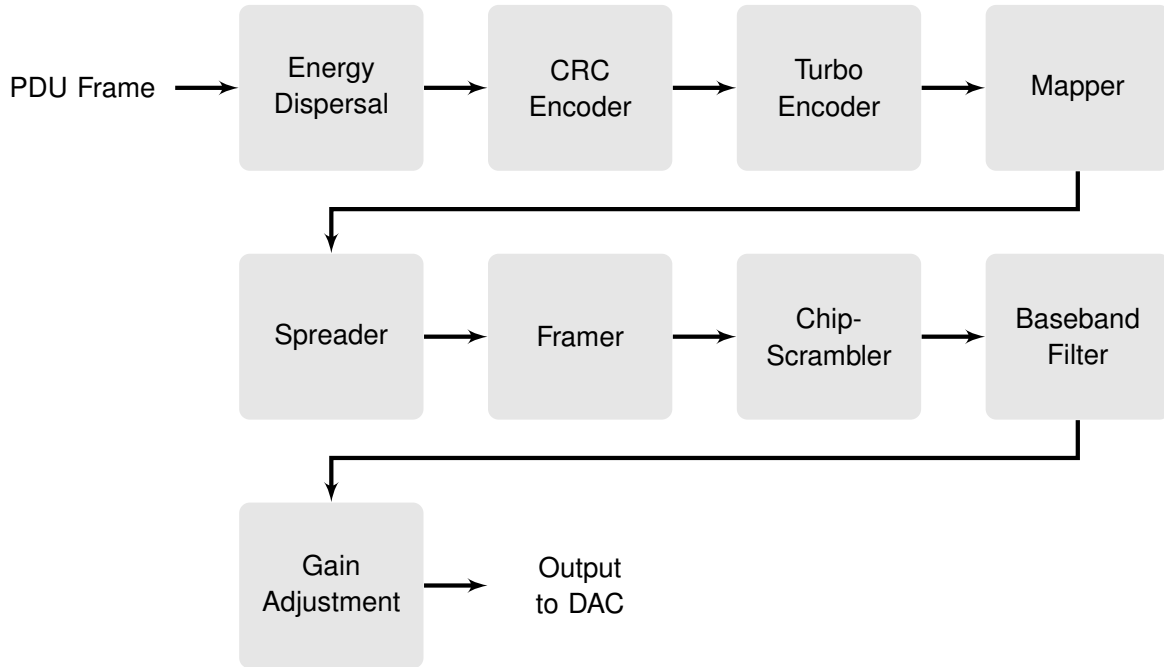
Applications

- Satellite communication
 - Return Channel
 - Interactive Services
 - Professional Services

Deliverables

- VHDL source code or synthesized netlist with testbench
 - HDL and Bit-accurate Matlab, C or C++ simulation models
 - C++ firmware (Yocto/Petalinux compatible)
 - Vivado IP Package
 - Comprehensive documentation
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The following picture gives an overview of all components that are part of the DVB-RCS2 Modulator IP core.



About Creonic

Creonic is an ISO 9001:2015 certified provider of ready-for-use IP cores for wired, wireless, fiber, and free-space optical communications. All relevant digital signal processing algorithms are covered, including, but not limited to, forward error correction, modulation, equalization, and demodulation. The company offers the richest product portfolio in this field, covering standards like 3GPP 5G, DVB-S2X, DVB-RCS2, CCSDS, and WiFi. The products are applicable for ASIC and FPGA technologies and comply with the highest requirements with respect to quality and performance. For more information please visit our website at www.creonic.com.

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