

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 (Xilinx, Altera).



### 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

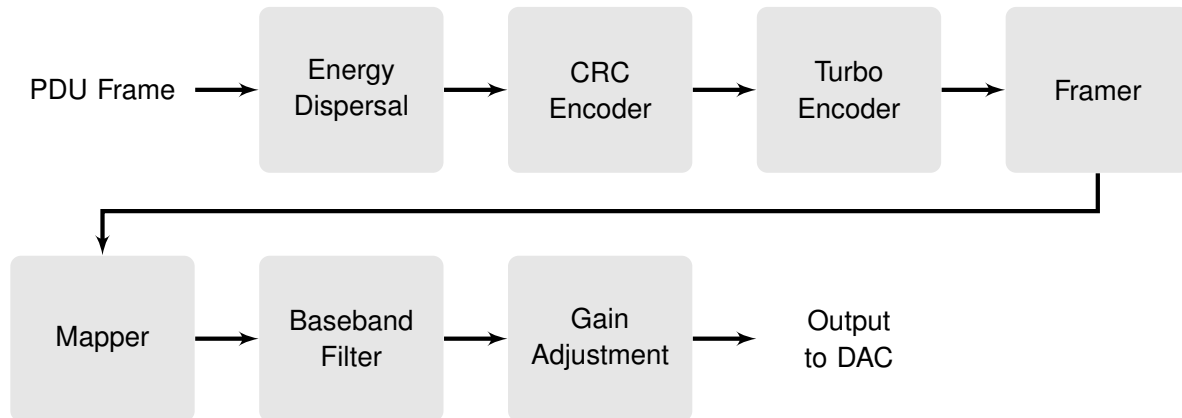
### Applications

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

### Deliverables

- VHDL source code or synthesized netlist
  - HDL simulation models
  - VHDL testbench
  - Bit-accurate Matlab, C or C++ simulation model
  - 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 several algorithms of communications such as forward error correction (LDPC, Turbo, Polar) modulation and synchronization. The company offers the richest product portfolio in this field, covering standards like 5G, DVB-S2X, DVB-RCS2, DOCSIS 3.1, 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 our website at [www.creonic.com](http://www.creonic.com).

## Contact

Creonic GmbH  
 Bahnhofstr. 26-28  
 67655 Kaiserslautern  
 Germany

Phone: +49 631 3435 9880  
 Fax: +49 631 3435 9889  
 Web: [www.creonic.com](http://www.creonic.com)  
 E-mail: [sales@creonic.com](mailto:sales@creonic.com)

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