

Creonic provides off-the-shelf IP cores for DVB-GSE encapsulation and decapsulation.

The DVB-GSE encapsulator performs the encapsulation of the network layer packets, also referred to as Protocol Data Units (PDUs), into one or more GSE packets, adding control information and performing integrity checks when necessary. Finally, it places the GSE packets into Baseband Frames (BBFRAMEs), ready for further processing by the Creonic DVB-S2X Modulators.

The Creonic DVB-GSE decapsulator performs the decapsulation of BBFRAMEs, containing one or more GSE packets. As a last step, it extracts the PDUs, i.e. the network layer packets, from the GSE packets.

## Benefits

- The output of the core perfectly matches the Creonic DVB-S2X modulators both in narrowband (M100 and M400) and wideband (M800) versions.
- The input of the core perfectly matches the Creonic DVB-S2(X) Decoders and DVB-S2X Wideband Decoder.
- Optional insertion of Frame CRC-32 in the encapsulator.
- Low-power and low-complexity design.
- AXI4-Stream data interfaces for a seamless integration.
- AXI4-Lite interface for configuration and retrieval of status information.
- Available for ASIC and FPGAs (AMD Xilinx, Intel, Microchip).



## Features

- Compliant with ETSI TS 102 606-1 V1.2.1 (2014-07) (DVB-GSE Lite)
- Support for multi-protocol encapsulation (IPv4, IPv6, MPEG, Ethernet, etc.).
- Fragmentation of IP datagrams or other network layer packets over baseband frames (BBFRAMEs) to support ACM.
- Support for single stream systems.
- Support for VLSNR mode in Narrowband.
- Support for 3-byte and 6-byte Labeling and Packet Filtering.
- Support for Jumbo Frames.

## Applications

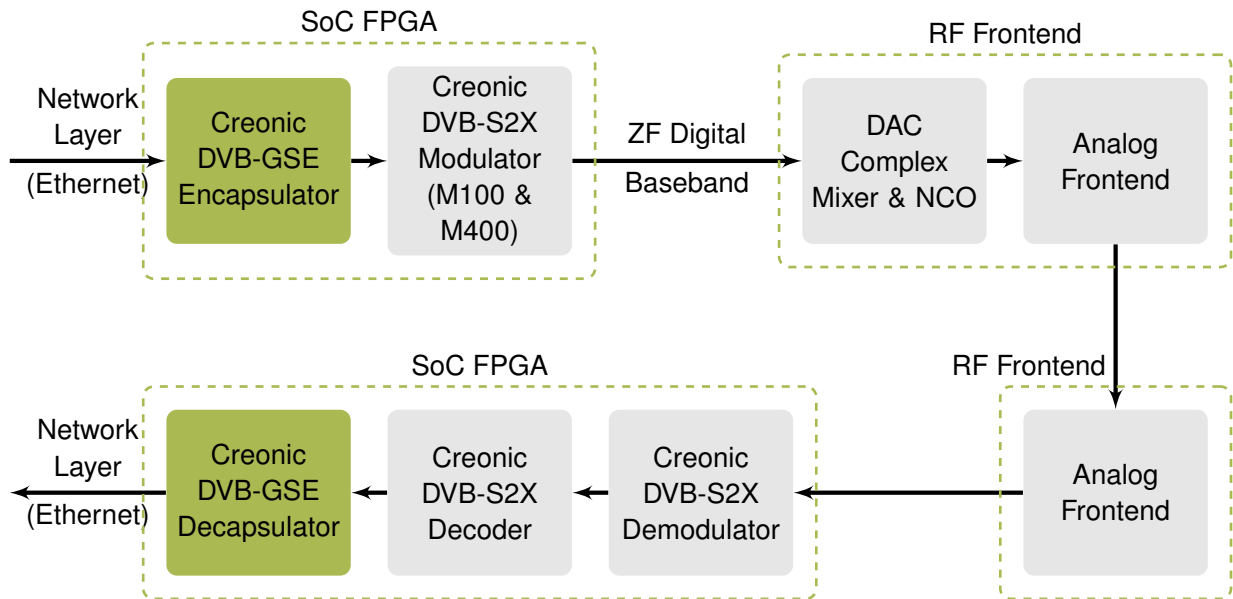
- Applications with the need for encapsulation of IP and other network-layer packets over DVB-S2 or DVB-S2X physical layer frames.

## Deliverables

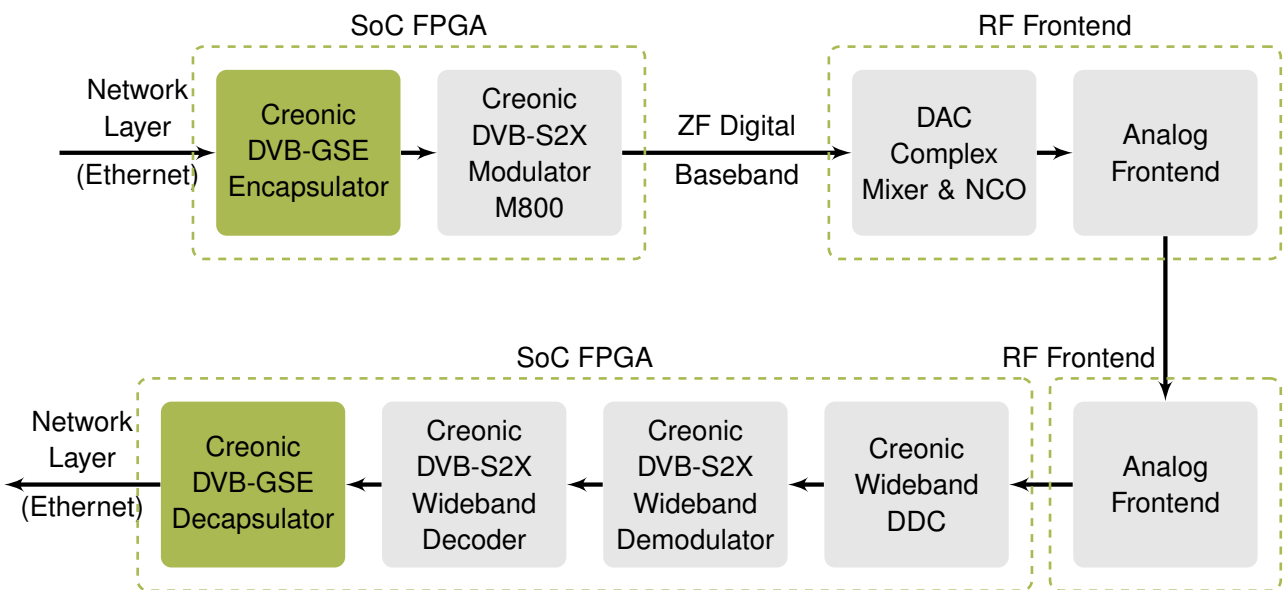
- VHDL source code or synthesized netlist
- HDL simulation models
- Bit-accurate Matlab, C or C++ simulation model
- comprehensive documentation

## Application Example

The following diagrams show typical scenarios for usage of the DVB-GSE encapsulator and decapsulator IP cores. The DVB-GSE encapsulator translates frames from the network layer (E.g. Ethernet) to BBFRAMEs before they are provided to the DVB-S2X Modulators. On the receiving side, the DVB-GSE decapsulator translates the decoded BBFRAMEs back to the network layer.



FPGA baseband frame generation (Narrowband).



FPGA baseband frame generation (Wideband).

## Related Products

[DVB-S2X Modulator](#)

[DVB-S2X Wideband Modulator](#)

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

[DVB-S2X LDPC/BCH Decoder](#)

[DVB-S2X Wideband LDPC/BCH Decoder](#)

## 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](http://www.creonic.com).

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