

Creonic's LTE/LTE-A IP Core is an advanced, customer-proven implementation of the standardized 3GPP turbo code. The turbo decoder was designed for base station and user equipment applications. However, the high flexibility in block lengths and code rates makes it the ideal fir for further applications.

## LTE / LTE-A Turbo Decoder

Key benefits of the decoder are:

- Silicon-Proven.
- Up to 1.0 Gbit/s payload throughput.
- Scalable architecture.
- Low-power and low-complexity design.
- Latency free CRC check for code word and transport block CRCs.
- Configurable amount of turbo decoder iterations for trading-off throughput and error correction performance.
- Soft output information available.
- Design-time configuration of input quantization.

## Related Products

[5G-NR LDPC Decoder](#)

[Generic Polar Encoder and Decoder](#)

[MIMO Detector](#)

## Features

- Compliant with 3GPP Release 8 LTE turbo decoding
- Compliant with 3GPP Release 10 LTE Advanced turbo decoding
- Support for codeword CRC and up to four transport block CRCs

## Applications

- Base stations (BS)
- User equipment (UE)
- Applications with the need for a wide range of code rates and block lengths
- Further High-throughput Applications

## Deliverables

- VHDL source code or synthesized netlist
- HDL simulation models e.g. for Aldec's Riviera-PRO
- VHDL testbench
- bit-accurate Matlab, C or C++ simulation model
- comprehensive documentation

## 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, 4G, 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)

Twitter: [Creonic\\_IPCores](#)  
Facebook: [Creonic](#)  
LinkedIn: [Creonic](#)

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