

DVB-C Demodulator

Overview

The demodulator is designed to be used together with a cable tuner and an analog to digital converter (ADC). The system has an internal state machine to control the operation, which can be externally configured via the SPI interface. This DVB-C QAM demodulator is supplied as a portable and synthesizable Verilog-2001 IP. The system is designed to be used in conjunction with a standard cable tuner. The QAM signal is acquired blindly, and QAM signal constellations from QAM 16 through QAM 256 are supported. The equalizer in the chip can be configured as fractional or symbol spaced. It acquires the QAM signal without a training sequence, in blind mode, and then tracks the signal in the decision-feedback mode. Signal degradation due to impulse noise in cable systems is overcome using a combination of convolutional interleaving and Reed-Solomon error correction.

Additional Features

- DVB-C EN 300 429 & ITU-T J.83 Annex A & Annex C compliant QAM demodulator
- Supports IF input
- QAM constellations 16, 32, 64, 128 and 256
- Blind acquisition of QAM constellation sizes
- Parallel and Serial MPEG outputs
- 3 external clocks, or 2 external, 1 internally generated
- SPI port (Slave) to external processor

Applications

- Set-top boxes
- Cable receivers
- Digital Cable ready TV sets

Deliverables

- Synthesizable Verilog
- System Model (Matlab)
- Verilog Test Benches
- Documentation
- FPGA testing environment

A comprehensive DVB-C Demodulator datasheet can be provided under an NDA, please contact info@global-ipc.com.