Digital Entertainment

ViSTA VES9600

Single Chip Channel Decoder
DVB-T Single-Chip Solution

OVERVIEW

The ViSTA VES9600 digital terrestrial television decoder chip is designed to demodulate 2K and 8K OFDM broadcast transmissions based on the ETSI 300 744 specification.

The VES9600 contains all the functionality required to demodulate an COFDM signal in the UHF/VHF band, perform necessary channel and bit stream decoding, including forward error correction, and generate an MPEG2 transport stream output.

The VES9600 integrates seamlessly with other components of the ViSTA solution for Set-Top Box products and integrated digital television designs including the VES2700 MPEG Transport Demux and the VES6100 MPEG2 Decoder.

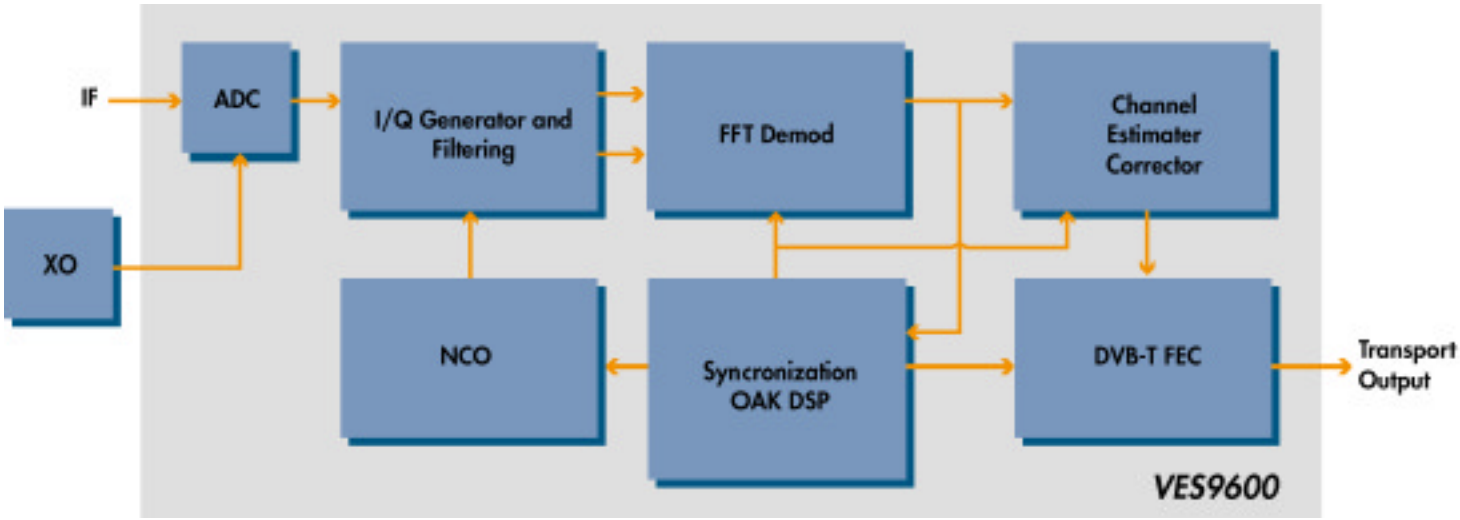
The VES9600 implements algorithms which enhance stability and performance in environments with strong co-channel and adjacent channel interference as well as other severe terrestrial channel characteristics.

Also, a common phase estimator (CPE) is implemented to reduce the effects of tuner phase noise.

The VES9600 integrates a digital clock recovery circuit eliminating the need for an external VCXO. Also the device integrates an analog-to-digital converter, simplifying external logic requirements.

Validated API firmware is also available with the VES9600. API firmware greatly reduces the need for system software development and allows for system design flexibility and software-transparent product upgrades.

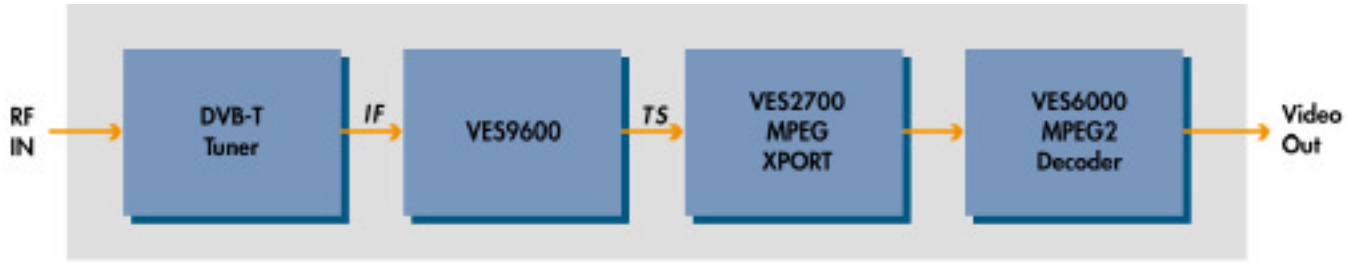
Block Diagram



FEATURES

- Bandwidth variable 8MHz/7MHz/ 6MHz
- Supports both 2K FFT and 8K FFT
- Supports QPSK, 16-QAM and 64-QAM
- Hierarchical and not-hierarchical modes
- Implements all required Guard Intervals (1/32, 1/16, 1/8, 1/4)
- Implements an embedded OAK DSP for synchronization
- Channel response estimation and correction
- Enhanced features implemented to handle CCI/ACI
- Provides complete DVB-T FEC
- Embedded API firmware
- I²C serial bus interface
- OFDM de-interleaving
- QPSK/QAM demapping; symbol and bit de-interleaving
- Viterbi decoder
- Constraint length K=7 with G1=171 base 8, G2=133 base 8
- BER monitor
- Forney convolutional deinterleaving of depth 12
- Reed Solomon decoder (204,188)

Typical Application



VLSI Technology

VLSI Technology, Inc.
1109 McKay Drive
San Jose, CA 95131
USA