AVL6211

DVB-S2/S Demodulator

OVERVIEW

- Conforms to the following standards:
  ETSI EN 302-307-1 V1.4.1
  Part I (DVB-S2)

  ETSI EN 300-421 V1.1.2 (DVB-S)

- This demodulator provides a high performance, cost effective solution for receiving systems.

FEATURES

DVB-S2

- High performance QPSK/8PSK satellite TV receiver
- Support normal (64800 bits) FECFRAME
- Normal FECFRAME Symbol rate
  QPSK 1-55MSps
  8PSK 1-55MSps
- Roll-off factors for pulse shaping: 0.2, 0.25 and 0.35

DVB-S

- Symbol Rates: 1-55 MSps
- Code Rates: 1/2, 2/3, 3/4, 5/6, 7/8

General

- Fast automatic blind scan
- Carrier frequency acquisition range:
  ±5MHz when Symbol rate >3 MSps
  ±3MHz when remaining Symbol rate
- Multi-purpose modulator for DiSEqC™ 2.0 application
- Satellite zero IF input is supported
- I2C repeaters to reduce tuner noise
- I2C supports 400kHz operation
- Flexible AGC and GPIO outputs for tuner and LNB controls
- TS Interface
- Parallel and 1-bit Serial MPEG transport stream output capability
- Supports a tri-state MPEG output interface
- SQI, SSI and BER/PER monitors
- 64 pin LQFP in 7x7 mm package
- 1.2V core voltage and 3.3V I/O supply
- Temperature range –10C to +85C

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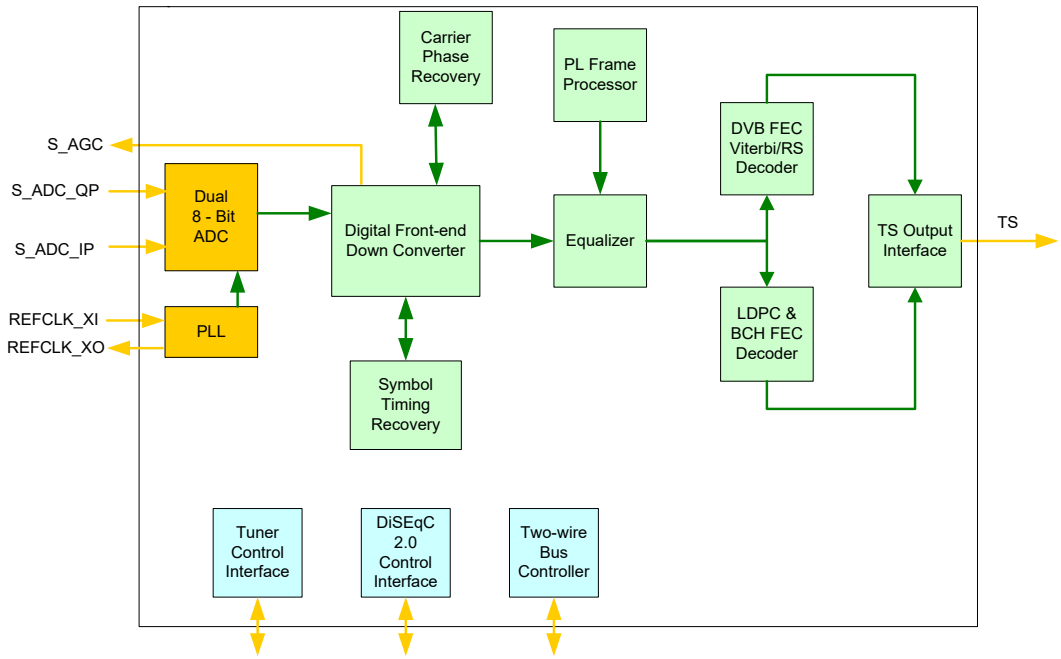
Block Diagram



Description

The AVL6211 is a highly integrated DVB-S2/S channel receiver IC. It converts a baseband IQ signal from a satellite tuner and performs a set of sophisticated demodulating and decoding operations to output a transport stream. The AVL6211 provides simple and flexible control via a standard two-wire bus.

The AVL6211 includes dual, differential, high performance, analog to digital converters (ADC) with an input correction circuit comprised of dual DC removers and an IQ imbalance compensator. An RF AGC output is provided for simple gain control of the satellite tuner via an RC network.

The corrected signal is processed through decimation filter with digital AGC, a matched filter, a symbol timing recovery loop, a carrier frequency and phase tracking loop, and equalizer and FEC decoders and finally the data is packetized in TS output interface block.

The configuration of the AVL6211 is easily performed through a set of register via a standard two-wire bus. To simplify the interface to the host system, this same two-wire bus is used to communicate with the separate tuner two-wire bus and the DiSEqC™ interface to LNB.

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