



Product Brief

Intel® CE 9542
SNIM Reference Design

Consumer Electronics

Applications

- 1 to 45 Msps DVB-S and DSS receivers
- SMATV (Satellite Master Antenna TV) transmodulators
- Data and satellite PC implementations

Satellite PayTV* Front End



Product Overview

The Intel® CE 9542 SNIM reference design is a complete front-end reference design for reception of digital satellite TV signals. This reference design takes advantage of Intel's highly integrated satellite front-end chipset, which includes the Intel® CE 5037 direct-conversion tuner and the Intel® CE 6313 QPSK demodulator.

The Intel CE 9542 SNIM reference design allows customers to quickly and cost-effectively evaluate and implement a satellite-receiver solution for numerous market segments, including PayTV* DVB-S and DSS, and free-to-air applications in which similar signal levels and installation quality are present. This highly reliable design can be copied directly to a system motherboard, which is particularly beneficial in high-volume consumer applications.

Intel® CE 9542 SNIM Satellite TV Front-End Application

The Intel CE 9542 satellite receiver front-end reference design supports the growing demand for high-performance, cost-effective motherboard-based solutions. Based on the Intel® CE 5037 DVB-S tuner and the Intel® CE 6313 DVB-S demodulator, this application board delivers designers a fast and easy solution for evaluating and implementing a complete front-end satellite receiver design.

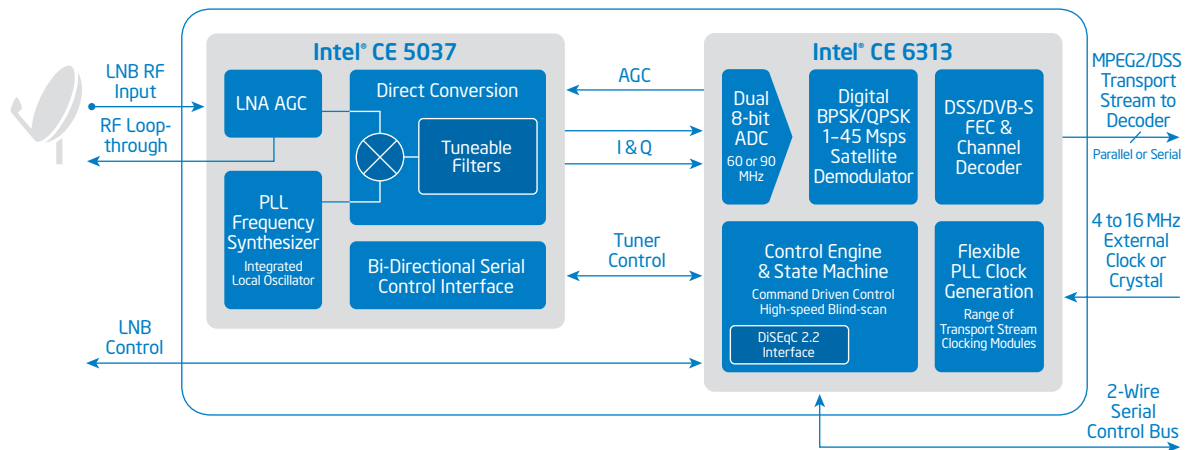
An additional board, the Intel® CE 9594 interface board, provides a low-voltage differential signaling set of MPEG outputs, allowing high-speed MPEG data to be transmitted to test equipment over relatively long leads (>2 m). It also provides DiSEqC controlled voltages for the control of a remote low-noise block, which can be switched for horizontal/vertical polarization, with a superimposed 22 kHz signal for DiSEqC 2.x messaging.

As shown in the application diagram (Figure 1), the Intel CE 5037 satellite tuner with integrated RF loop-through enables scalable tuner design for PVR/DVR set top box design and/or cascaded STB connector. The tuner's "power and forget" integrated local oscillator eliminates the need for time-consuming calibration or alignment. With a high desired/undesired ratio performance, the Intel CE 5037 DVB-S tuner enables operation in the presence of adjacent channel interferers greater than 18 dB and low noise block feed steps in excess of 18 dB positive or negative.

The Intel CE 6313 DVB-S demodulator provides industry-leading 1 to 45 Msps auto-scan capability. The high-speed scanning mode for blind frequency, symbol-rate and code-rate acquisition enables set top boxes to efficiently scan the Astra high-band (11.7 to 12.75 GHz) and the 20 to 30 Msps channels in only 22 seconds for both polarization.

The Intel CE 6313 DVB-S demodulator together with the Intel CE 5037 DVB-S tuner consume less than a watt of power. Both devices are equipped with a sleep pin, enabling significant power reduction in stand-by mode. This ultra-low current consumption assists in compliance with Energy Star* requirements.

Figure 1 — Intel® CE 9542 Satellite Receiver Front-End Application Board Diagram



Product Features

Intel® CE 9542 SNIM Reference Design

- Easily integrated onto motherboard for maximum cost savings
- Lowest BOM available – fewer than 60 components including all discretes
- Low power consumption (<1 W maximum)
- Full software support results in minimal host overhead
- Very fast blind-scan capability
- Self-contained bit error rate test (BERT)
- Operation from 1 to 45 Msps for all code rates
- GUI running under Microsoft® Windows 98, 2000, XP and NT
- Integrated RF loop-through LNB circuitry and interactive DiSEqC 2.x support
- Fully-integrated automatic "power and forget" local oscillators
- Excellent desired/undesired channel performance
- Hardware and software user guides
- PCB Gerber files, circuit schematic and measured performance results

Intel® CE 9542 Evaluation Board

- Compact 2-layer FR4 circuit board with RF input and output, 2-wire serial interface, MPEG and control interface and power-supply connectors
- Includes serial bus to PC adaptor
- Active area of design measures 35 mm by 46 mm
- All components available in production quantities

Customer Support

- The Intel CE 9542 SNIM reference design is available to qualified customers.

For more information, visit the Intel Consumer Electronics home page at: www.intel.com/go/consumerelectronics

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