![Intel® Leap ahead™]

DVB-T Digital Terrestrial Front-end Solution with Thomson* Tuner

Applications

- DVB-T set top boxes
- DVB-T integrated digital TV
- PC DVB-T receiver cards

Product Overview

The Intel® CE 9519 DVB-T TNIM reference design is a complete DVB-T digital terrestrial front end integrating the Intel® CE 6355 NorDig Unified high-performance COFDM demodulator and the Thomson* DTT73xxx DVB-T mini can tuner* including an RF loop-through and tuner with IF section. It is designed specifically for digital terrestrial network interface modules (TNIMs) or "on-motherboard" set top box (STB) implementation.

This reference design allows customers to quickly and cost-effectively evaluate and implement the DVB-T standard in their STB designs. Software is supported directly by Intel and each reference design is accompanied by a complete suite of documentation and test results. This DVB-T reference design offers excellent signal-handling performance and low power consumption.

Intel® CE 9519 DVB-T TNIM Reference Design with Thomson* Application

The Intel CE 9519 front-end application board addresses the high-performance requirements defined by the NorDig Unified digital terrestrial standards.

Received digital terrestrial signals are down-converted via the Thomson tuner/IF module to the "on-board" Intel CE 6355 COFDM demodulator for channel coding to MPEG transport stream output. The tuner's AGC (automatic gain control) is monitored allowing RF signal strength to be reported back via the device's 2-wire serial bus control.

The Intel CE 9519 DVB-T TNIM kit is supplied with an Intel CE 9594 interface board, which only requires a single +5 V supply, all other power rails are generated on board. The Intel CE 9519 front-end solution is optimized for real in-field terrestrial environmental conditions.

Supplied as a tested and characterized application board, the reference design provides a reliable, fast time-to-market DVB-T front-end solution.

For further information on the Thomson DTT73xxx tuner/IF range please send an email to tuners@thomson.net.

Intel® CE 9519 RF to MPEG DVB-T Solution
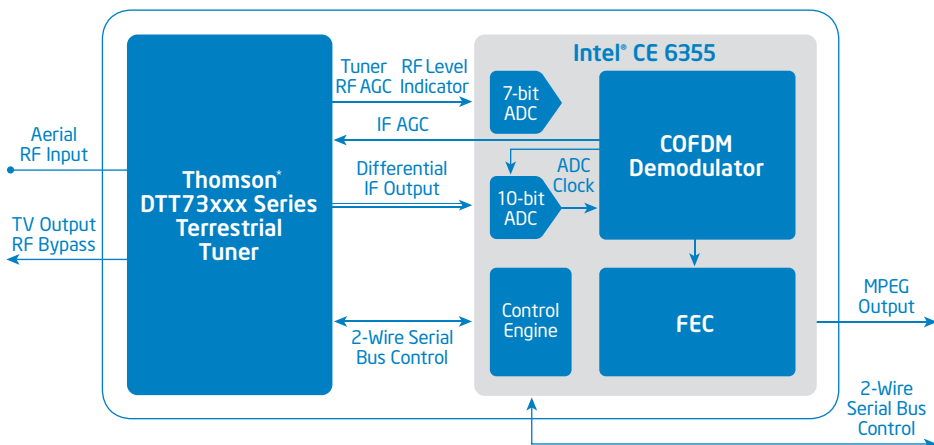
Intel® CE 9519 DVB-T TNIM Application Board Performance Summary

Parameter	Value (typ)	Units
RF frequency range	174 to 862	MHz
RF signal range	–3 to –80	dBm
Co-channel analog interference	–3.5	dB
N±1 adjacent channel protection	36 (PAL) 32.5 (DVB-T)	dB
N±2 to X non-adjacent channel protection	>46 (PAL) >39 (DVB-T)	dB
Image channel protection	47 (PAL) 33 (DVB-T)	dB
Carrier to noise	18.9	dB
Power consumption	1.0 (operational) 0.7 (standby)	W
Blind scan time—UHF mode 9 digital with 5 analog channels present	12 (2 K mode) 18 (2/8 K mode)	sec

Note: 64QAM, 3/4 code rate, 1/4 guard interval, 8K mode

Product Features

Intel® CE 9519 DVB-T TNIM Reference Design

- DVB-T and NorDig Unified compliant
- Excellent blind-channel scan times
  - UHF 2 K only—9 digital with 5 analog channels present—less than 12 seconds
  - UHF 2 K/8 K—9 digital with 5 analog channels present—less than 18 seconds
- On-chip automatic:
  - Lost signal re-acquisition (no external programming required)
  - Co-channel and adjacent-channel interference suppression
- Excellent single-frequency network support
- Integrated RF signal level read-back
- On-chip active-impulse noise filtering
- Single SAW bandwidth for 6/7/8 MHz channel
- Low power consumption (< 1.0 W)
- Hardware and software power-down mode for PC cards
- Full software support with minimal host overhead support
- Compact 2-layer FR4 PCB, single-sided component application board reference design
- Includes serial bus to PC adapter, via Intel® CE 9594 interface card
- Support material available:
  - Schematics and layout artwork
  - Intel® CE 6355 data sheet and design manual
  - Hardware user manuals
  - Full software package
  - Performance test results

Customer Support

- The Intel CE 9519 DVB-T TNIM reference design is available to qualified customers.

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