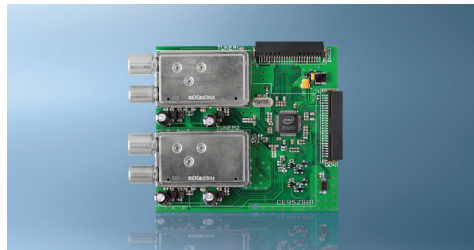intel®
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Product Brief

Intel® CE 9529
DVB-T Front-End Solution

Demodulators and Tuners

Applications

- DVB-T PVR set top boxes
- DVB-T integrated digital TVs
- PC DVB-T receiver cards
- Portable DVB-T receivers

Dual-Channel Diversity-Enabled DVB-T Digital Terrestrial Front-end Solution with Thomson* Tuner

Product Overview

The Intel® CE 9529 reference design is a complete two-channel diversity enabled DVB-T digital terrestrial front end that includes the Intel® CE 6251 NorDig Unified high-performance COFDM dual-channel demodulator and Thomson* DTT7320x terrestrial tuners. Digital terrestrial signals are received and down-converted by the Thomson

tuners to a conventional IF and fed to the Intel CE 6251 COFDM demodulator for independent two-channel coding to transport-stream output. The Intel CE 9529 reference design specifically addresses the challenges of terrestrial TV product performance, power and size in applications including personal video recorder (PVR), set top boxes, diversity TV set top boxes, portable integrated TVs (iDTVs) and PC-TV modules and cards.

Reference Design Kit

Supplied as a tested and validated application board, the reference design provides a reliable, fast time-to-market two-channel DVB-T digital front-end solution. This highly integrated front-end reference design kit enables you to quickly

Intel® CE 9529 DVB-T TNIM Application Board Performance Summary

Parameter	Value (typ)	Units
RF frequency range	174 to 230 470 to 858	MHz
RF signal range	–80 to –5	dBm
Co-channel protection	3.5	dB
N±1 adjacent channel protection	33.5 (DVB-T) 37 (PAL)	dB
N±2 to X non-adjacent channel protection	39 (DVB-T) 45 (PAL)	dB
Image channel protection	35 (DVB-T) 49 (PAL)	dB
Diversity gain	3 (AWGN) 4.8 (Rayleigh fading)	dB
Carrier to noise	19.3	dB
Power consumption	3300 (operational) 100 (standby)	mW mW
Blind scan time—UHF mode 9 digital with 5 analog channels present	12 (2 K mode) 18 (2/8 K mode)	sec sec

Note: 64QAM, 3/4 code rate, 1/4 guard band, 8K mode, UHF band 8 MHz channel

Block Diagram
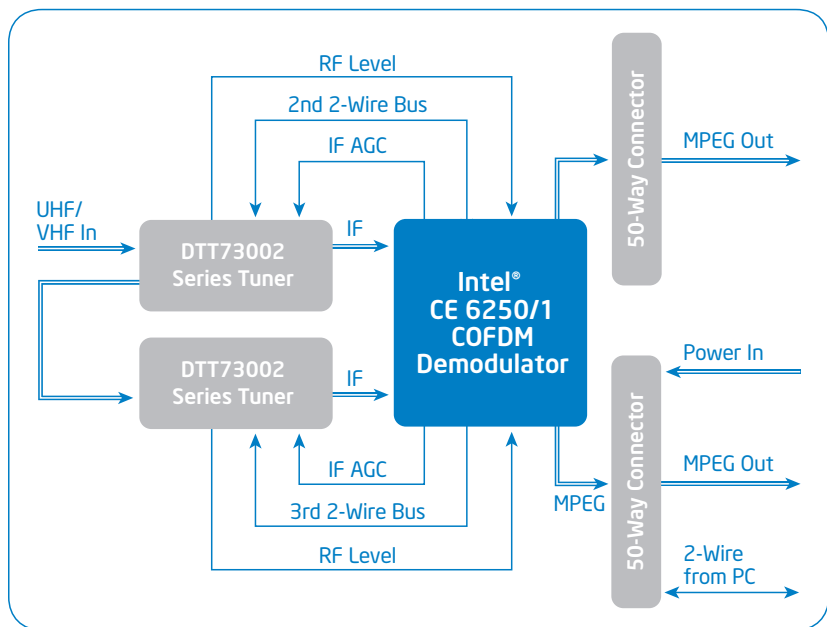
and cost-effectively evaluate and implement the DVB-T standard in your product designs. Software is supported directly by Intel and the design includes comprehensive documentation and test results. This compact, low-power dual-channel DVB-T front-end solution provides NorDig Unified 1.0.2 signal-handling performance. The reference design kit is supplied with a single +5 volt supply only, since all other power rails are generated onboard. The solution is optimized for real in-field terrestrial environmental conditions.

Product Features

- DVB-T EN300 744 compliant

- Tested to NorDig Unified 1.0.2 performance

- Low power consumption < 3.3 W

- On-chip state-machine control enabling

  – Automatic co-channel and adjacent-channel interference suppression

  – Active-impulse noise filtering, software controlled

  – Automatic lost-signal reacquisition

  –Excellent blind-channel scan times

- UHF 2K only (9 digital channels in the presence of 5 analog) < 12 sec

- UHF 2K/8K (9 digital channels in the presence of 5 analog) < 18 sec

- Software programmable 6, 7 and 8 MHz channel operation

- External clock or single low-cost 20.48 MHz crystal

- Low driver-software overhead due to on-chip state-machine control

  – Power down mode under software control

  – Channel bit error rates, and uncorrected block count

  – BER and C/No signal indicators

- Support for Intel CE 6250 and Intel CE 6251 software development

- Support material available:

  – Schematics and layout diagrams

  – Intel CE 6250 and Intel CE 6251 demodulator data sheet and design manual

  – Hardware user manuals

  – Full software package

  – Performance test results

Customer Support

Contact your current sales representative for availability and customer supports details.

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

For more information on the Thomson DTT7320X tuners please contact sales@thomson.net.

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