

Product Brief

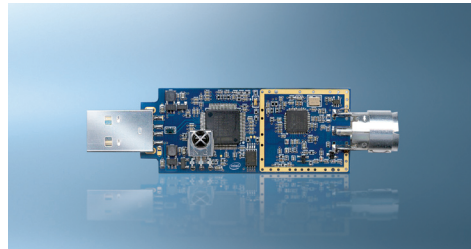
Intel® CE 9500 "Stick" Reference Design

Demodulators and Tuners

Applications

- PC DVB-T USB TV receiver "sticks"
- DVB-T USB "plug and play" modules and cards
- Hand-held TV receivers
- Portable DVB-T receivers

DVB-T Digital Terrestrial TV Receiver Solution for PCs



time-to-market. Intel directly supports hardware and software design with a comprehensive suite of documentation and test results. This PC-TV receiver solution offers high performance signal handling with low power consumption and specifically addresses the system and field challenges of PC USB-based TV receivers.

Product Overview

The Intel® CE 9500 PC-TV USB "stick" reference design is a complete DVB-T digital terrestrial TV receiver solution for the PC. The two-chip solution is based on the Intel® CE 6230 DVB-T demodulator with USB 2.0 interface and the MaxLinear* MxL500x terrestrial tuner. The design addresses the needs of USB-based DVB-T PC-TV receivers.

This PC-TV USB "stick" reference design is a production-ready solution that enables fast

Intel® CE 9500 PC-TV USB Reference Design

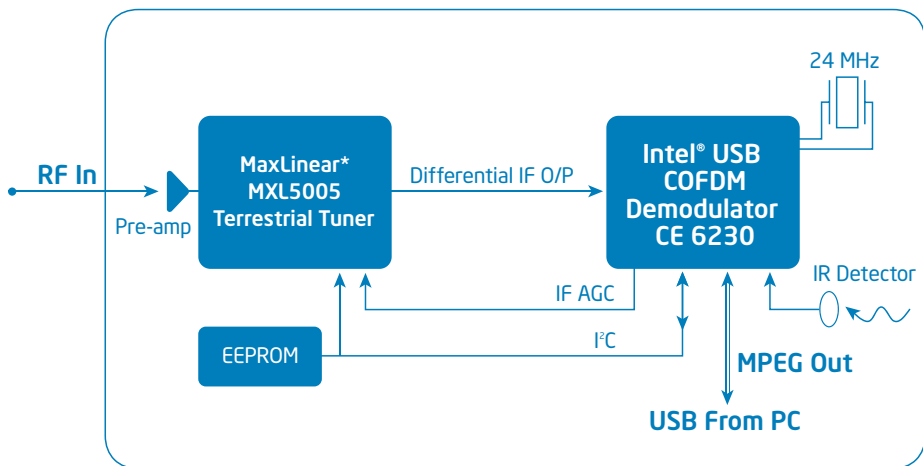
Received digital terrestrial signals are down-converted to a low IF by the MaxLinear tuner and then passed to the CE 6230 DVB-T demodulator, which integrates Intel's DVB-T demodulator with an Intel® 8051 microcontroller. Audio and Video Transport Stream output is carried via the USB 2.0 interface to the PC host.

Intel® CE 9500 DVB-T TNIM Application Board Performance Summary

Parameter	Value (typ)	Units
RF frequency range	174 to 230 474 to 858	MHz
RF signal range	-81 to -10	dBm
Co+channel protection	5	dB
N±1 adjacent channel protection	31 (DVB-T) 35 (PAL)	dB
N±2 to X non-adjacent channel protection	39 (DVB-T) 45 (PAL)	dB
Carrier to noise	19	dB
Power consumption	1 (operational)	W
Blind scan time—UHF mode	12 (2 K mode)	sec
9 digital with 5 analog channels present	18 (2/8 K mode)	

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

Block Diagram



The Intel CE 9500 reference design includes all necessary support features and functions including DC-DC conversion, active-antenna support and an on-board remote control IR interface. The receiver is designed to meet NorDig Unified RF field requirements, USB 2.0 and EMC standards. The design includes a complete set of design and manufacturing support collateral to enable you to accelerate time-to-market for a DVB-T PC-TV USB stick product.

For further information on the MaxLinear MxL500x tuner series please contact sales@maxlinear.com.

Product Features

- DVB-T PC-TV USB “stick” designed to meet NorDig Unified 1.0.2
- Single-sided component, two-layer PC design
- Low power consumption < 1W
- Excellent blind-channel scan times (UHF mode: 9 digital, 5 analog channels present)

- 2K-12 seconds
- 2/8K-18 seconds
- On-chip automatic:
 - Lost signal reacquisition (no external programming required)
 - Co-channel and adjacent channel interference suppression
- Excellent single frequency network support
- Integrated RF signal level read back
- No SAW filter required
- Integrated PID filters for reduced USB data-rate transfer
- Hardware and software power down modes
- Supported by:
 - Data sheet and design manual for the Intel CE 6230 DVB-T demodulator
 - Bill of material, schematics and diagrams
 - Full software GUI for operational performance verification testing
 - Source-code driver software including BDA MCE binary drivers (provided under license by LN Systems UK Ltd.*)
 - Performance test results including: NorDig Unified 1.0.2, USB 2.0, ESD and EMC

Customer Support

The Intel CE 9500 DVB-T PC-TV USB receiver stick reference design is available to qualified customers. Technical support is provided by Intel’s Premier technical support system.

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

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