



## Product Brief

Intel® CE 6354  
DVB-T Demodulator  
Consumer Electronics

# Intel's First DVB-T COFDM Diversity-Enabled Terrestrial Demodulator



### Product Overview

The Intel® CE 6354 DVB-T diversity demodulator builds on the high-performance standards set by Intel's CE 6355 NorDig Unified 1.0.2 component by incorporating a maximum ratio combining (MRC) processor that enables up to four Intel CE 6354 demodulators to be cascaded together. This feature significantly improves the signal-handling performance of the solution compared to single demodulator designs, to facilitate portable "anywhere" TV reception.

The Intel CE 6354 diversity demodulator includes a high-performance 10-bit A/D converter capable of accepting direct IF integrated digital filtering and requires only a single 8 MHz channel SAW filter for 6, 7 and 8 MHz COFDM signal reception, plus a 7-bit ADC for RF level indication. An advanced hard-wired on-chip state machine controls all acquisition and tracking operations, minimizing software overhead and resulting in fast auto-scan and auto-signal re-acquisition. The Intel CE 6354 diversity demodulator also features excellent single-frequency network SFN performance, unique auto active-impulse noise filtering and very low power consumption, including software/hardware power-down mode.

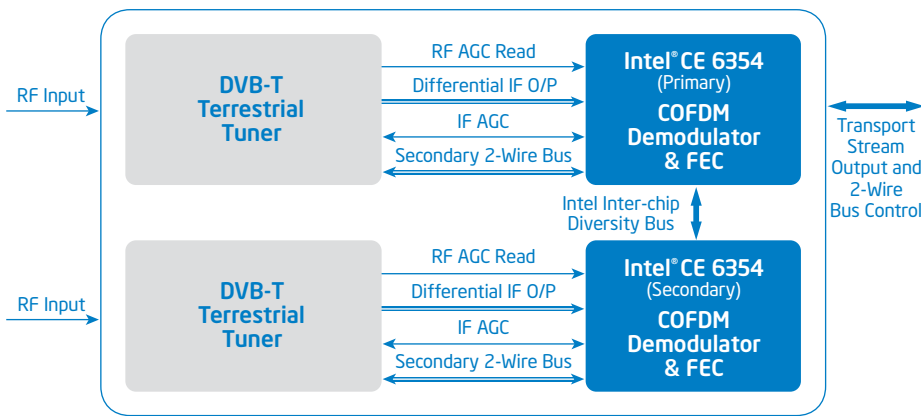
### Terrestrial Receiver Application

Intel supports the Intel CE 6354 DVB-T diversity demodulator with a two-device reference design that lets you quickly evaluate the improved performance offered by diversity over single demodulator operation. Each board includes complete documentation and test results, with software supported directly by Intel. Our DVB-T reference designs offer excellent signal-handling performance at very low power consumption.

The Intel CE 6354 DVB-T diversity demodulator has a unique on-chip dedicated tuner drive engine, ideal for the control of MOPLL-based RF tuner designs. This significantly reduces the tuner-control software overhead and results in very fast frequency channel-scan performance. For the non-MOPLL-based tuner, the Intel CE 6354 demodulator incorporates a 2-wire bus "bypass mode" that enables direct unrestricted programming.

The Intel CE 6354 DVB-T diversity demodulator accepts the classic TV IF frequencies of 36/44 MHz and low-IF down to 4.57 MHz. It provides tuner IF AGC control, and RF AGC read using a 7-bit ADC for calculated RF signal-strength indication. The Intel CE 6354 DVB-T demodulator's integrated digital filter reduces the bill of materials by eliminating the need for multi-bandwidth SAW IF channel filters. It provides 6, 7 and 8 MHz operation using a single 8 MHz SAW filter. Driven by high-level commands and featuring full automation, the Intel CE 6354 DVB-T demodulator can be directly interfaced in parallel or serial modes to all standard MPEG-2 processing chips.

### Terrestrial Receiver Application Diagram



### Product Features

#### Intel® CE 6354 DVB-T Demodulator

- Diversity-enabled DVB-T demodulator using maximum ratio combining
- Performance compliant standards
  - ETSI ETS 300 744 DVB-T
  - NorDig Unified 1.0.2
- Very fast blind-channel scan times
  - UHF 2K only—9 digital with 5 analog channels present—less than 10 sec.
  - UHF 2K/8K only—9 digital with 5 analog channels present—less than 18 sec.
- On-chip automatic functions
  - Lost signal re-acquisition with no external programming
  - Co-channel and adjacent-channel interference suppression
  - Active impulse noise rejection
- Low power consumption
  - Less than 320 mW normal operation
  - Less than 280 mW low power operation
  - Eco-friendly standby and sleep modes
- Excellent single-frequency network SFN performance

### Easy to Program

- State machine architecture simplifies software implementation and minimizes host processor intervention
- Simple high-level command-driven software
- Vast array of on-chip information available to the user
- Fully automated blind-acquisition capability with automatic mode-detect

### Simplified Design

- Integrated digital IF filtering reduces cost with single SAW filter operation
- RF signal-level indicator
- Dedicated 2-wire bus interface for efficient tuner control
- Clock generation from single low-cost 20.48 MHz crystal or external 4 or 27 MHz clock
- IF sampling from 4.57 to 36.17 MHz and at 43.5 MHz
- Direct interface to MPEG decoder chips
- Operational temperature range –40 to +85°C
- 7x7 mm 64-pin QPF package

### Customer Support

- Offered with production-ready reference designs



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

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