

PRODUCT PREVIEW

The ZL10354 is Zarlink's first "diversity enabled" demodulator for portable terrestrial DTV. The ZL10354 is based on Zarlink's superior fourth-generation ETSI ETS300 744 COFDM (Coded Orthogonal Frequency Division Multiplex) demodulator series. The new demodulator fully meets the performance requirements of NorDig Unified 1.0.2, DTG (Digital Television Group), Digtienne and all other global DVB-T (digital video broadcast-terrestrial) standards.

The diversity feature offers a significant signal performance improvement compared with single-channel designs, enabling reliable portable TV reception to be realized both in the home and outside for true pedestrian mobile TV. The ZL10354 is housed in a small 7x7 mm 64pin QFP (quad flat pack) offering significant PCB form factor space savings. Designed specifically for rugged portable TV products such as TV, PC-TV and pedestrian mobile handsets, the operational temperature range has been extended to -40 to +85 degrees Celsius.

The ZL10354 includes a high-performance 10-bit A/D converter capable of accepting direct IF, integrated digital filtering that enables a single 8 MHz channel SAW filter to be used for 6, 7 and 8 MHz OFDM signal reception and 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 world leading auto scan and auto signal re-acquisition capability. The ZL10354 maintains Zarlink's market lead in single frequency network performance, unique auto active impulse noise filtering and very low operational power consumption.

"Diversity Enabled" Demodulator

- ➔ DVB-T, DTG, Digtienne and NorDig Unified 1.0.2 compliant
- ➔ "Diversity enabled" using integrated Maximum Ratio Combining processor
- ➔ Excellent blind channel scan times
 - UHF 2K only - 9 digital with 5 analog channels present - less than 12 seconds
 - UHF 2K/8K - 9 digital with 5 analog channels present - less than 18 seconds
- ➔ On-chip automatic functions
 - Lost signal re-acquisition (no external programming required)
 - Co-channel and adjacent channel interference suppression
 - Active impulse noise rejection
- ➔ Low power consumption
 - Less than 0.32 W, and eco-friendly standby and sleep modes
- ➔ Superior single-frequency network support

Easy to program

- ➔ Innovative state machine architecture simplifies software implementation and minimizes host processor intervention
- ➔ Simple high-level command-driven software
- ➔ A vast array of on-chip information available to the user
- ➔ Fully automated blind acquisition capability (including automatic mode detect)

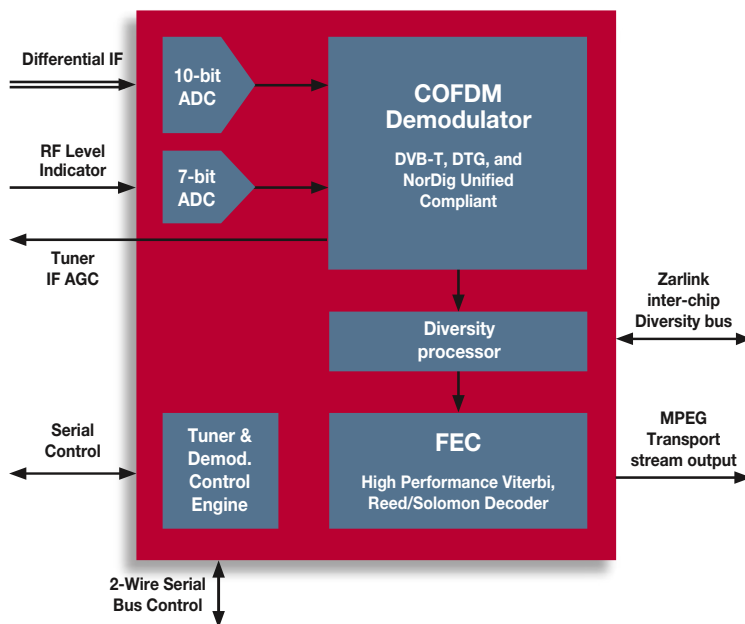
Simplified Design

- ➔ Integrated digital IF filter reduces system cost through single SAW operation
- ➔ On-chip RF signal level indicator and 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 at 4.57, 36.17 or 43.5 MHz
- ➔ Interfaces directly to MPEG2 decoder chips

Customer Support

The ZL10354 is offered with production-ready reference designs supported by Zarlink's network of field application and design engineers.

ZL10354 Simplified Block Diagram



Applications

- ➔ Portable TV
- ➔ Pedestrian mobile TV
- ➔ Integrated digital televisions
- ➔ PC-TV receivers

ZL10354 COFDM DEMODULATOR

APPLICATION

With the ZL10354, Zarlink has introduced a unique “diversity” feature for portable DTV designers to easily link two or more chips together to achieve higher reception quality.

The ZL10354 is supported by complete front-end reference designs, including one with the Thompson DTT7300 mini can tuner. A complete suite of documentation, test results and software accompanies each design. This DVB-T design offers excellent signal handling performance demonstrating the advantages of diversity in portable TV applications.

The ZL10354 has an in-built dedicated tuner drive, ideal for the control of MOPLL-based RF tuner designs. This reduces the software overhead needed for driving the tuner and results in very fast channel scan performance. For the non-MOPLL based tuners the ZL10354 incorporates a 2-wire bus

“bypass mode” enabling direct unrestricted programming of the tuner.

The ZL10354 accepts normal TV IF frequencies of 36/44MHz nominal and low IF down to 4.57MHz. Tuner AGC is provided and the RF AGC is read by a 7 bit ADC for calculated RF signal strength indication. The ZL10354’s integrated digital filter reduces the solution BOM (bill of material) by eliminating the need for multi bandwidth IF channel filters, as currently implemented using switched SAW filters. Using a single 8MHz SAW filter 6, 7 and 8 MHz operation is provided.

Driven by high-level commands and featuring full automation, the ZL10354 can be directly interfaced, in parallel or serial modes, to all standard MPEG-2 chips.

Terrestrial Receiver Application

