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TDA20136

Dual-stream 8PSK RF System for Unicable satellite reception

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The TDA20136 is NXP Semiconductor's highly-integrated dual 8PSK satellite tuner with improved performance and features for demanding 8PSK Unicable applications. The TDA20136 consists of two integrated digital satellite tuners performing the functions of L-band and baseband amplification, quadrature down conversion, local oscillator injection, Automatic Gain Control (AGC), and baseband filtering. The TDA20136 provides an internal LNA with a four-way splitter to support up to four tuners through a single RF switch control. This device is designed to manage very low Signal-to-Noise Ratio (SNR)carriers, carrier offsets, and adjacent channel interference particular to the satellite link. The tuner IC contains broadband input power detectors, on-chip synthesizers, totally integrated VCOs, internal LNA attenuators, quadrature mixers, variable gain baseband amplifiers and variable baseband filters.

Features and benefits

- Dual RF-to-baseband satellite receiver
- Integrated LNA with 4-way splitter and RF switch
- Two pass-through outputs allow easy connection to another dual or single tuner
- Low power consumption (1.7 W typical, with both channels active)
- Very low phase noise, integrated Local Oscillators (LOs) for demanding 8PSK applications (0.36 degrees RMS DSB)
- Excellent noise figure (9 dB, typical)
- Excellent linearity (10.5 dBm IIP3, typical)
- 60 dB (typical) isolation between channels
- General Purpose Output (GPO) pins provide ability to drive external attenuators
- Integrated RF power detectors allow estimation of composite input power levels for optimal gain distribution
- Built-in auto tuning machine eliminates the need for software calibration
- Buffered clock output
- Supports 8PSK and QPSK Modulation Formats
- Supported symbol rates: 1 Msps to 45 Msps
- RF input frequency: 925 MHz to 2175 MHz
- Small footprint, lead-free, 8 mm ' 8 mm, 56-pin, plastic thermal enhanced very thin quad flat, no leads, (QFN) package

Applications

- Dual/Multi input DVB-S2 Unicable Set-top Boxes that require backwards compatibility with traditional installation

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