

NXT2004

VSB/QAM Receiver

FEATURES

- ATSC compliant VSB demodulation & FEC
- SCTE DVS-031, ITU-J.83B, and DOCSIS™ compliant 64/256 QAM demodulation and FEC
- QAM modes are compliant with Digital TV-Cable Connect and Digital TV-Cable Interactive labeling
- Exceptional dynamic and static multipath performance
- Superior interference cancellation (adjacent & co-channel NTSC, CSO/CTB)
- Sparsed equalizer provides improved noise gain and less stochastic jitter
- Extended equalization range
- High phase noise tolerance
- Fast acquisition < 50 msec
- Supports direct IF sampling frequencies including 43.75 MHz or 44 MHz as well as low IF
- High performance internal 10 Bit A/D converter with internal reference
- Internal PLL for continuous FAT channel parallel/serial MPEG data output
- All digital baud and carrier recovery, no external VCO or VCXO required
- Integrated 32KB de-interleaver RAM for VSB, 64 QAM and 256 QAM modes
- Unique and flexible AGC control system optimized for terrestrial/cable reception with integrator on chip
- Automatic acquisition and reacquisition
- Advanced signal level, signal quality indicators and statistical reporting
- Integrated BERT
- Zero software solution in normal operating mode
- On-chip microcontroller
- Flexible Tuner Control
- NTSC detection capability
- Easy migration from NXT2000 & NXT2002
- 8 general purpose I/O pins
- Integrated I²C compatible slave
- Low power mode
- Typical power consumption <750mW
- 100 pin LQFP

The **NXT2004 VSB/QAM Receiver** is designed for a variety of applications including off-air and cable digital television receivers, set-top boxes, PCDTV and datacast applications where **cost, low power and industry leading performance are a must.** The NXT2004 Multimode VSB/QAM demodulator is configurable to work in either the ATSC compliant 8 VSB mode for terrestrial broadcasting or in the ITU-J.83B/SCTE DVS-031/ DOCSIS™ compliant 64 QAM or 256 QAM modes for Digital TV-Cable Connect and Digital TV-Cable Interactive reception.

The NXT2004 is a highly integrated solution to DTV reception demonstrating superior performance in the presence of multipath, phase noise, impulse noise, adjacent and co-channel interference in terrestrial and cable environments. The NXT2004 handles 0dB echoes through a wide range of delays.

The sparsed equalizer provides better AWGN performance, exceptional dynamic multipath tracking, and less stochastic jitter than conventional equalizers. Advanced integrated adaptive control provides fast reliable acquisition and reacquisition. These advancements in equalizer technology improve the overall demodulator performance resulting in reliable operation in environments where competing solutions may not acquire or maintain signal lock.

Features include automatic acquisition and reacquisition of the DTV signal. The NXT2004 is capable of reporting detailed statistical and signal quality information to the host processor. The RF Sense input together with the signal quality information enhances the end user's ease of operation. The improved AGC control allows separate programmable gain compensation between the RF and IF blocks optimizing the gain distribution. Eight programmable ports are user configurable. The NXT2004 provides the tuner with a buffered interface configurable for I²C compatible, 3- or 4- wire control. The NXT2004 can be configured to operate from a 25 MHz crystal or from an external 25 MHz clock source. The on-chip integration of the ADC, AGC integrator, tuner control and the all-digital carrier recovery circuitry further reduces the cost of external components.

