



# QPSK/BPSK Demodulator IC

## CX24110

### High-Performance, Low-Power Broadband Satellite Front-End Solution

Combining Conexant's experience in broadband systems and mixed-signal integrated circuit design, the CX24110 is the ideal solution for a wide variety of applications in DVB/DSS set-top and PC receivers, digital VCRs, and single/multiple-channel per carrier receivers. When combined with the CX24108 satellite tuner RF IC, the CX24110 provides a complete broadband satellite front-end solution capable of operating from 1 to 45 Msps in the most demanding satellite environments.

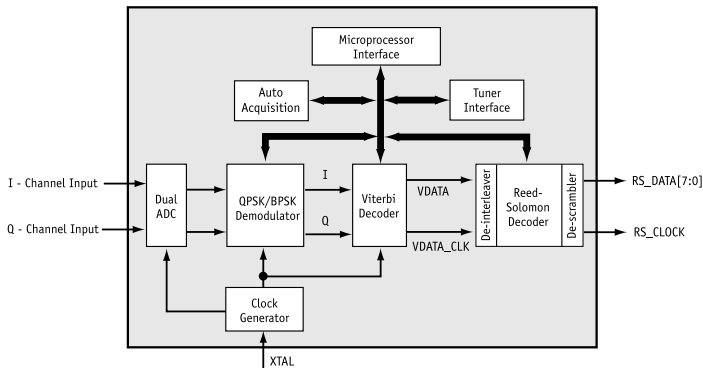
The CX24110 is a QPSK/BPSK demodulator IC with internal dual analog-to-digital converters, digital demodulation, and forward-error correction (FEC). The demodulator IC provides digital derotation, digital filtering, equalization, and Viterbi/Reed-Solomon FEC. The CX24110 is compliant with the DVB (ETS 300-421) specification for satellite transmission.

The CX24110 provides many advanced features that enhance overall system performance. The demodulator IC automatically corrects for external quadrature gain/phase imbalances and for DC offsets. The input signal level variations (e.g., due to rain fade) are compensated for the Automatic Gain Control, and frequency offsets due to inexpensive consumer LNBS are corrected by a robust-carrier tracking loop. A unique feature of the CX24110 is an automatic acquisition algorithm which searches and acquires the carrier during initial acquisition, and performs a smart search to reacquire the carrier during fade conditions. The CX24110 has integrated SNR and BER monitors for channel-performance measurements.



### Distinguishing Features

- QPSK/BPSK demodulation
- DVB/DSS compliant
- Symbol rates: 1 to 45 Msps
- Automatic acquisition
- Adaptive (FIR) equalizer
- Internal Viterbi and Reed-Solomon FEC
- Internal SNR and BER monitors
- DiSeqC™ Level 1.1 LNB control



CX24110 block diagram

### Ordering Information

Model Number	Package	Ambient Temperature Range
CX24110	100-pin PQFP	0°C to +70°C
CX24110 EVK	Evaluation Kit	

### Product Features

- QPSK/BPSK demodulation
- DVB/DSS compliant
- Symbol rates: 1 to 45 Msps
- Automatic acquisition
- Adaptive (FIR) equalizer
- Internal carrier and bit timing recovery
- Internal Viterbi and Reed-Solomon FEC
- Internal SNR and BER monitors
- DiSEqC™ Level 1.1 LNB control

### Product Specifications

- External crystal frequency: 10 MHz
- Sampling frequency: 45,60,80,90 MHz
- Carrier tracking:  $\pm$  sample frequency/8
- Quadrature equalization compensation:  $\pm 3$  dB gain,  $\pm 13^\circ$  phase
- Viterbi decoding rates: 1/2, 2/3, 3/4, 4/5, 5/6, 6/7, and 7/8
- Output data interface: serial or parallel
- Supply voltage: +3.3V, +1.8V

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