



# 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.

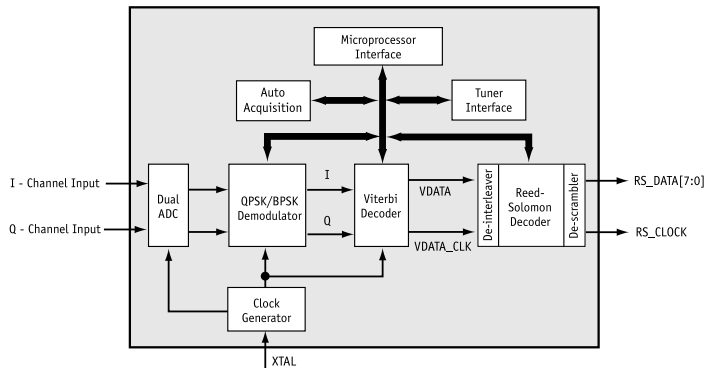
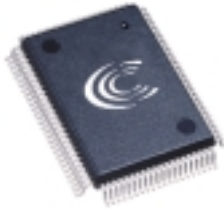
The CX24110 is a QPSK/BPSK demodulator IC with internal dual analog-to-digital converters, digital demodulation, and forward-error correction (FEC). The demodulator IC provides digital derotation, digital filtering, equalization, and Viterbi/Reed-Solomon FEC. The CX24110 is compliant with the DVB (ETS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

Conexant and the Conexant symbol are trademarks of Conexant Systems, Inc.

## Further Information

literature@conexant.com  
 (800) 854-8099 (North America)  
 (949) 483-6996 (International)  
 Order # 100970A  
 00-0601  
 Digital Infotainment  
 Printed in USA

## World Headquarters

Conexant Systems, Inc.  
 4311 Jamboree Road  
 Newport Beach, CA  
 92660-3007  
 Phone: (949) 483-4600  
 Fax 1: (949) 483-4078  
 Fax 2: (949) 483-4391

## Americas

### U.S. Northwest – Santa Clara

Phone: (408) 249-9696  
 Fax: (408) 249-7113

### U.S. Southwest – Los Angeles

Phone: (805) 376-0559  
 Fax: (805) 376-8180

### U.S. Southwest – Newport Beach

Phone: (949) 483-9119  
 Fax: (949) 483-9090

### U.S. San Diego

Phone: (858) 713-4730  
 Fax: (858) 713-4008

### U.S. North Central – Illinois

Phone: (630) 773-3454  
 Fax: (630) 773-3907

### U.S. South Central/Mexico – Texas

Phone: (972) 733-0723  
 Fax: (972) 407-0639

### U.S. Northeast – Massachusetts

Phone: (978) 367-3200  
 Fax: (978) 256-6868

### U.S. Carolinas – North Carolina

Phone: (919) 858-9110  
 Fax: (919) 858-8669

### U.S. Southeast/South America – Florida

Phone: (727) 799-8406  
 Fax: (727) 799-8306

### U.S. Mid-Atlantic – Pennsylvania

Phone: (215) 244-6784  
 Fax: (215) 244-9292

### Canada – Ontario

Phone: (613) 271-2358  
 Fax: (613) 271-2359

## Europe

### Europe Central – Germany

Phone: +49 89 829-1320  
 Fax: +49 89 834-2734

### Europe North – England

Phone: +44 1344 486444  
 Fax: +44 1344 486555

### Europe – Israel/Greece

Phone: +972 9 9524000  
 Fax: +972 9 9573732

### Europe South – France

Phone: +33 1 41 44 36 51  
 Fax: +33 1 41 44 36 90

### Europe Mediterranean – Italy

Phone: +39 02 93179911  
 Fax: +39 02 93179913

### Europe – Sweden

Phone: +46 (0) 8 5091 4319  
 Fax: +46 (0) 8 590 041 10

### Europe – Finland

Phone: +358 (0) 9 85 666 435  
 Fax: +358 (0) 9 85 666 220

## Asia Pacific

### Taiwan

Phone: (886-2) 2-720-0282  
 Fax: (886-2) 2-757-6760

### Australia

Phone: (61-2) 9869 4088  
 Fax: (61-2) 9869 4077

### China – Central

Phone: 86-21-6361-2515  
 Fax: 86-21-6361-2516

### China – South

Phone: (852) 2 827-0181  
 Fax: (852) 2 827-6488

### China – South (Satellite)

Phone: (86) 755-5182495  
 Fax: (86) 755-5183024

### China – North

Phone: (86-10) 8529-9777  
 Fax: (86-10) 8529-9778

### India

Phone: (91-11) 692-4789  
 Fax: (91-11) 692-4712

### Korea

Phone: (82-2) 565-2880  
 Fax: (82-2) 565-1440

### Korea (Satellite)

Phone: (82-53) 745-2880  
 Fax: (82-53) 745-1440

### Singapore

Phone: (65) 737 7355  
 Fax: (65) 737 9077

### Japan

Phone: (81-3) 5371 1520  
 Fax: (81-3) 5371 1501