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[NXP Semiconductors/Freescale Semiconductor, Inc.](#)
[CX24113A-12Z,518](#)

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NXP digital satellite tuner IC CX24113A

Highly integrated, worldwide satellite silicon tuner

The CX24113A is NXP's third generation direct down-conversion satellite tuner RF IC intended for operator-based digital satellite networks and free-to-air systems.

Key features

- ▶ Single-chip RF-to-baseband satellite receiver
- ▶ Zero-IF architecture eliminates the need for image reject filtering
- ▶ Variable baseband filters for optimal interference rejection
- ▶ Auto-tuning machine eliminates the need for software calibration
- ▶ Very low power consumption
- ▶ Small (6 mm x 6 mm) footprint
- ▶ Lead-free package

The CX24113A is a highly integrated satellite tuner solution that incorporates an advanced Fractional-N synthesizer, I²C serial interface, a fully integrated local oscillator, and variable baseband filters. The device has an improved power supply rejection ratio (PSRR), requires a single +3.3V supply, and features very low power consumption.

The CX24113A has a built-in auto-tuning machine that eliminates the need for software calibration and accelerates the calibration time. The on-chip fractional synthesizer enables fine frequency step size without adversely affecting lock time. The CX24113 does not require a balun, thus reducing external bill of materials (BOM) cost. Its highly integrated design saves valuable board space and simplifies RF layout.

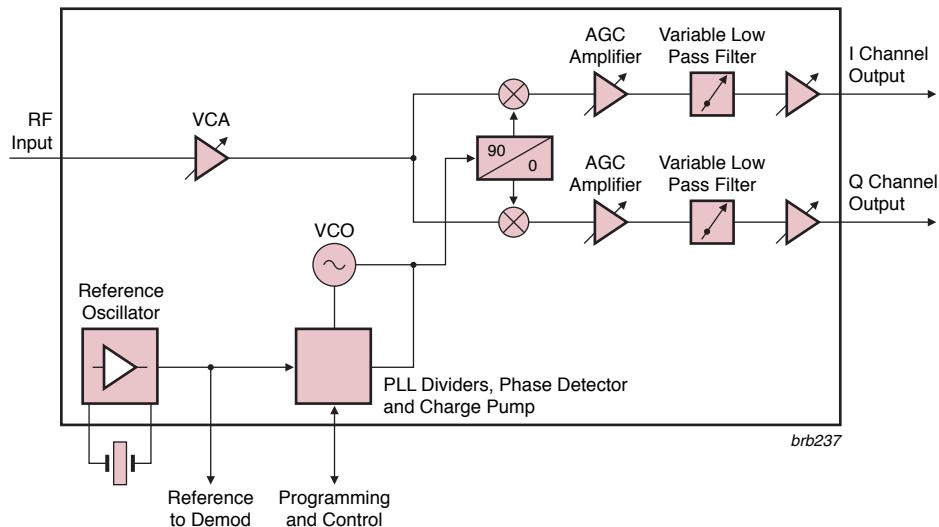
Applications

- ▶ DSS/DVB set-top boxes
- ▶ Digital VCR (DVR)
- ▶ Commercial digital video, audio, and data receivers

The company's broad portfolio of semiconductor products also includes client-side xDSL and cable modem solutions, home network processors, broadcast video encoders and decoders, digital set-top box components and systems solutions, and dial-up modems. In addition to its IEEE 802.11a/b/g-compliant WLAN chipsets, software and reference designs, NXP offers a suite of networking components that includes solutions for applications based on HomePlug® and HomePNA™. Additional products include a complete line of asymmetric and symmetric DSL central office solutions, which are used by service providers worldwide to deliver broadband data, voice, and video over copper telephone lines.

CX24113A features

- ▶ RF input: 925–2175 MHz
- ▶ Input power range: -20 to -90 dBm
- ▶ Symbol rate: 1–45 MSps
- ▶ Noise figure: 10 dB, typical
- ▶ Input IP3 at minimum gain: 10 dBm, typical
- ▶ Baseband filter bandwidth: 3–40 MHz
- ▶ Output voltage: 0.5 Vp-p @ $RL > 1 k\Omega$
- ▶ Operating temperature: 0–85° C
- ▶ Package type: 36-pin, Pb-free, QFN



CX24113 Block Diagram