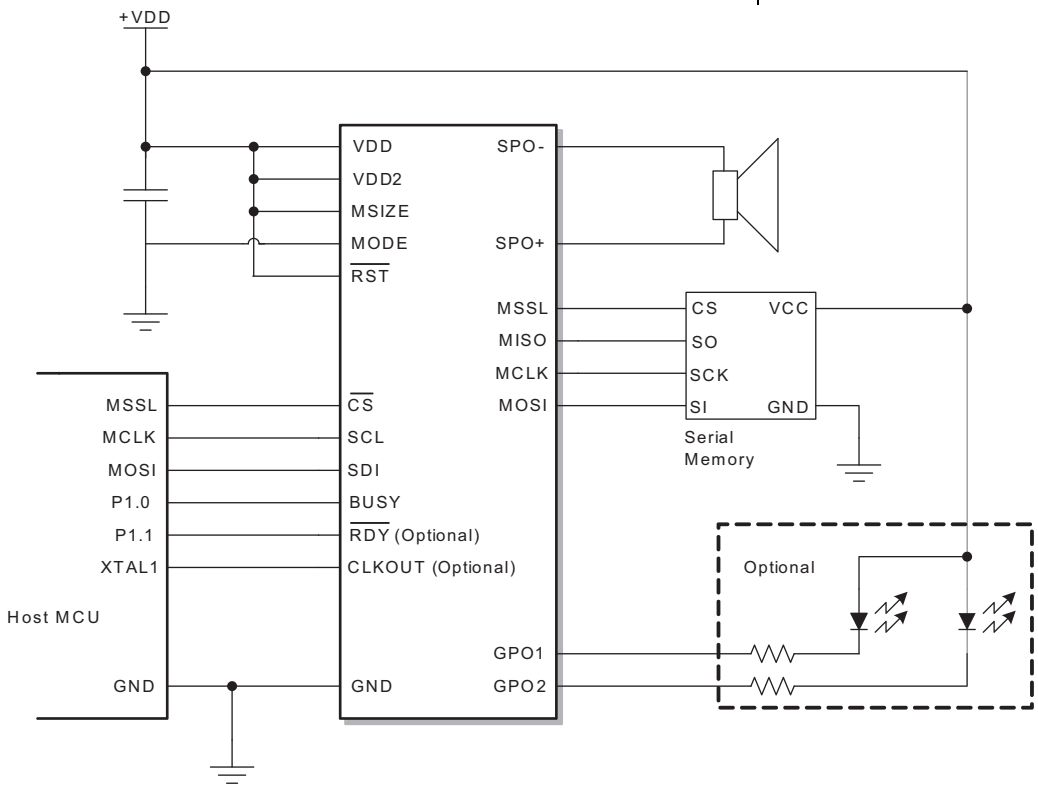
KX1400 Audio Playback IC

The KX1400 is an audio playback IC designed to play 8 kHz audio data directly to an external speaker via an on-chip digital audio processor and class-D driver. Both 12-bit PCM and 4-bit IMA ADPCM data formats are supported. It also has a built-in tone generator capable of generating tones at 4096 different frequencies. The on-chip audio processor eliminates the need for an external low-pass filter in most cases. The KX1400 utilizes low-power CMOS technology and provides a stand-by power-savings state, making it well suited for battery-powered applications.

The KX1400 operates in either a standalone mode or interfaced to a microcontroller (MCU) host. Audio data is provided to the KX1400 from either a user-programmed external serial memory or from the host MCU. Under MCU control, the user can select phrases or tone sequences to play from the external memory, play tone sequences via commands, or stream audio data directly to the on-chip audio processor. In standalone mode, no MCU is required; on reset, the KX1400 plays a single phrase from external memory and then returns to a stand-by power-saving state.

Example Application Circuit

The example circuit shown in the right column below shows the KX1400 in host-controlled operation with audio data stored in external serial memory. Commands are sent from the MCU to play tones and audio phrases from external memory. Audio data and commands can also be stored in the MCU's data memory and transmitted to the KX1400, eliminating the need for an external memory IC.



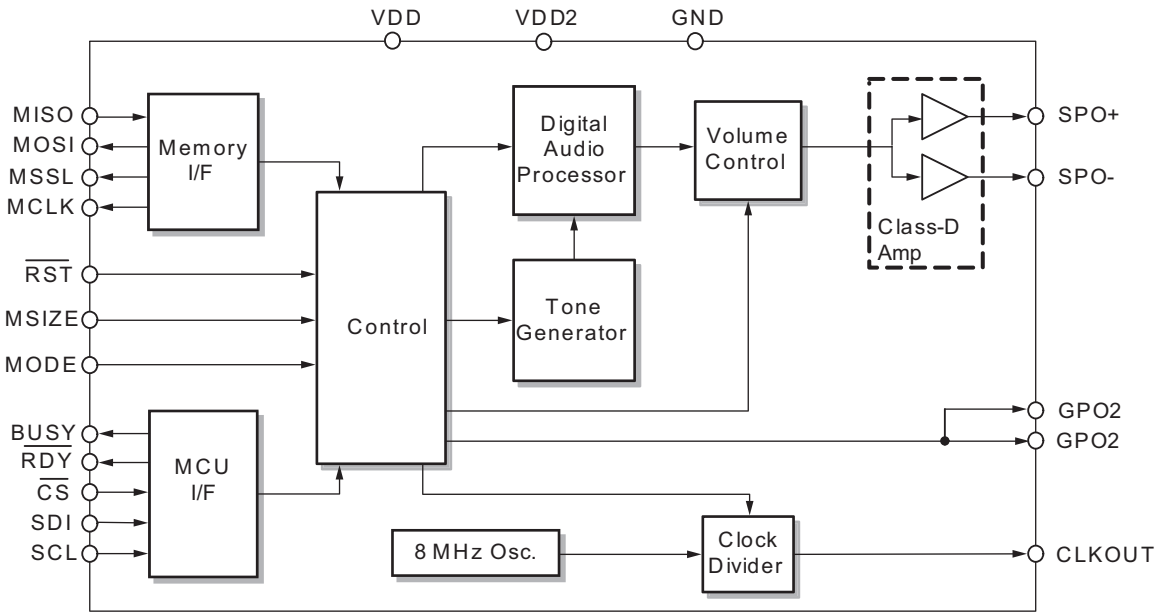
Conexant Part Number	Ordering Number	Description	Packages
KX1400EG-11Z	KX1400EG-11Z	KX1400 Audio Playback IC	24QFN 4x4mm
KX1400DK-EVK	KX1400DK-EVK	KX1400 Evaluation Kit	
The devices are lead-free (Pb free) and RoHS compliant			

Part Number KX1400

Description KX1400 Audio Playback IC

KX1400 Features

- Plays Pre-recorded 8 kHz Audio Data
- Operates Standalone or as MCU Peripheral
- On-chip Tone Generator
- Built-in Digital Audio Processor
- Integrated Class-D Speaker Driver
- No External Low-pass Filter Required
- Digital Volume Control
- On-chip Oscillator - No XTAL Required
- Plays up to 4096 Pre-recorded Audio Phrases
- Configurable General-purpose Clock Output
- Two General-purpose Digital Outputs
- Low-power Standby State (1 µA Typ.)
- Operating Voltage: 2.7V - 5.5V
- Operating Temperature: -40°C to 85°C
- Package:
  - 24-pin 4X4mm QFN (KX1400EG)



KX1400 Functional Block Diagram

The KX1400 is offered in a 24-pin 4X4mm QFN (KX1400EG) package

Conexant Product Portfolio

Conexant's comprehensive product portfolio includes solutions for imaging, audio, video surveillance, and embedded modem applications.

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