KETEREX

FEATURES

- Provides a PC-based Interface to the KX1400 via USB

- On-board 16-MByte External Flash Memory

- Stores over 30 minutes of 8 KHz Audio Data

- On-board Memory Programmable via USB

- Complete Integrated Development Environment

- Stand-alone and Host-controlled Operating Modes Supported

- Expansion Connector for MCU-based Prototyping

- 3.5mm (1/8" mini-plug) Audio Jack

- Directly drives 0.25W Speaker or Ear-bud Style Headphones

GENERAL DESCRIPTION

The KX1400 Development Kit provides the hardware and software necessary to quickly and easily interface the KX1400 Audio Playback IC to a PC-based host. The included KX1400 Evaluation Board simplifies the development of audio content and hardware prototyping for microcontroller-based designs. The development kit software includes a complete Integrated Development Environment (IDE) with features for real-time execution of KX1400 host-interface commands. Several example projects for creating audio data are included to demonstrate the capabilities of the KX1400 Audio Playback IC.

The KX1400 Development Kit includes: a KX1400 Evaluation Board populated with a KX1400EG (24-pin QFN), Keterex USB Adapter, Software and Product Information CD-ROM, and USB Cable.
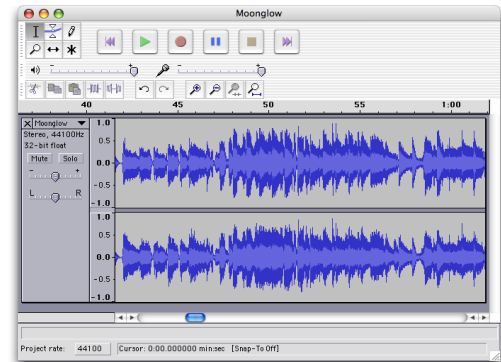

KX1400DKBR-R1

KX1400 Development Kit

Development Kit Hardware

The included USB-to-KX1400 Adapter connects the KX1400 Evaluation Board to a host PC and converts USB transactions to the KX1400 host-interface protocol. The KX1400 Evaluation Board is populated with a KX1400 IC, a 16-MByte Flash Memory IC, a 3.5mm headphone jack, two LEDs connected to the KX1400 general purpose digital outputs, a 20-pin expansion header, reset switch, and a jumper for selecting the KX1400 operating mode (host-controlled mode or stand-alone mode). The Evaluation Board is powered directly from the USB Adapter – no external power adapter is required.

Audio Editing Software

The KX1400 Development Kit includes a powerful audio recording, editing, and preview software package. It records audio, imports most audio file formats, and provides advanced audio editing features and special effects. Output from the audio editor can be imported by the Keterex Macro Language Processor for inclusion into a KX1400 audio data file.
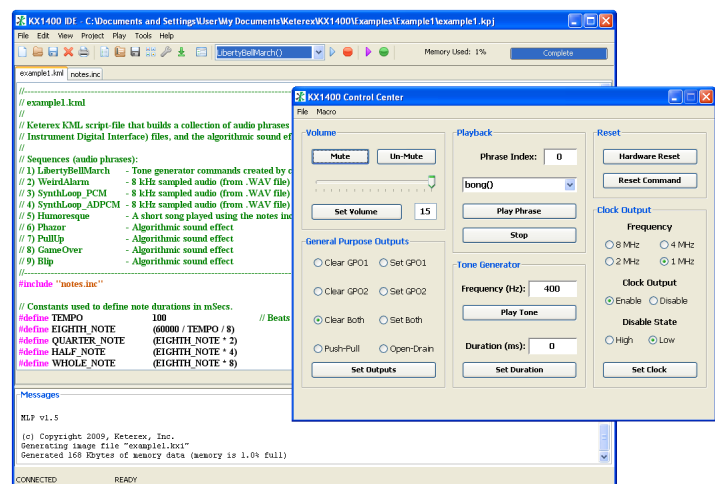
KX1400 Audio Generation Software

Software for generating KX1400 audio data files using the Keterex Macro Language (KML) is included. KML is a full featured scripting language for generating and assembling audio files, sounds, and KX1400 commands into a data file compatible with the KX1400 Audio Playback IC. KML supports importing and converting WAV and MIDI files, generation of KX1400 control and audio commands (such as volume control, playing tones, etc), and organizing sequences of audio data and control commands into KX1400 phrases. KML provides support for variables and arrays, parameterized subroutines, flow-control (if, while, etc), and conditional compilation. These language constructs can be used to implement algorithms for audio special-effects using sequences of KX1400 audio and control commands.

KX1400 Integrated Development Environment

The KX1400 IDE integrates the software tools for developing KX1400 audio files with an interface for in-system memory programming and the real-time execution of KX1400 commands and audio phrases from a PC-based host, eliminating the need for a microcontroller and firmware for initial evaluation and development.

The IDE provides a syntax-aware text editor for creating and maintaining KML Macro Language input files, a graphical user interface (GUI) for the KML processing software, a Flash memory programmer, and a control panel (KX1400 Control Center) for issuing KX1400 commands real-time through the KX1400's SPI MCU interface. A library of audio phrases can be generated using the audio-editing and KML processing software, quickly downloaded to the on-board Flash memory, and played by issuing commands from the KX1400 IDE.

Ordering Part Number	Package/Case	Operating Temp.	Packaging
KX1400-DK			

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