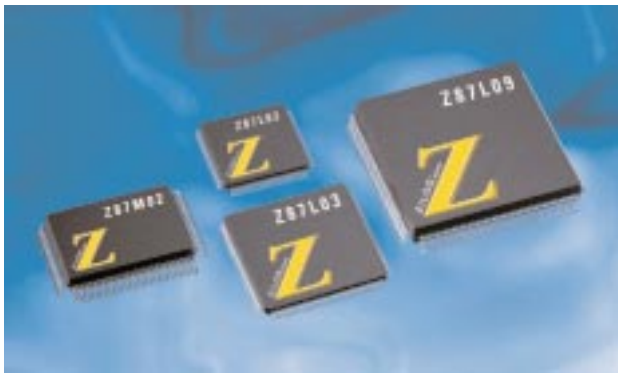
The Wave™ Chip Z87L02/L03



Frequency-Hopping Spread-Spectrum Digital Voice/Data Controllers with Flash Capabilities

Power and flexibility

Optimized for highly secure and reliable low-speed wireless communications, the Wave™ chip offers unprecedented flexibility for spread-spectrum voice or data applications. Various network options, from the basic point-to-point link to peer-to-peer or star multipoint configurations, are made possible by the Wave™ chip's architecture, which combines efficient dedicated communication hardware with flexible software functions.

The Wave™ chip's horsepower is obtained by a dual-DSP core processor. While the DSP coprocessor offloads data encoding and interfacing functions, the primary DSP is responsible for running the adaptive frequency-hopping radio control and a highly robust communications protocol. Equipped with embedded ROM and RAM memory and a large number of I/O interfaces and mixed-signal peripherals, the primary DSP has plenty of extra power left to implement various microcontroller or user-interface functions.

Extensive development environment

Packed with features, the Wave™ chip nevertheless achieves its goals without compromising ease of use. The extensive development environment includes an optimized C-compiler, a Windows-based in-circuit emulator, and an evaluation kit that enables engineers to quickly develop simple or complex applications. This tool suite is complemented by ZiLOG's ZProbe, a test and debug tool that can measure RF bit error-rate performance.

The Z87L02 is the Wave™ chip's ROM-based version. A Flash-based pin-compatible equivalent, the Z87M02 offers quick prototyping of the user interface and control functions prior to ROM masking. Alternately, the Z87L03 ROMless device supports external Flash memory and offers in-circuit reprogramming.

The Z87L0X Wave™ chip supports a range of frequencies. A 900-MHz transceiver IC and RF module reference design, compatible with ZiLOG's evaluation kit, are offered by Analog Devices. The Wave™ chip firmware can also be easily adapted for operation in other frequency bands such as the 2.4 or 5.8 GHz unlicensed ISM bands.

Applications

One Wave™ chip can be used in an array of applications including:

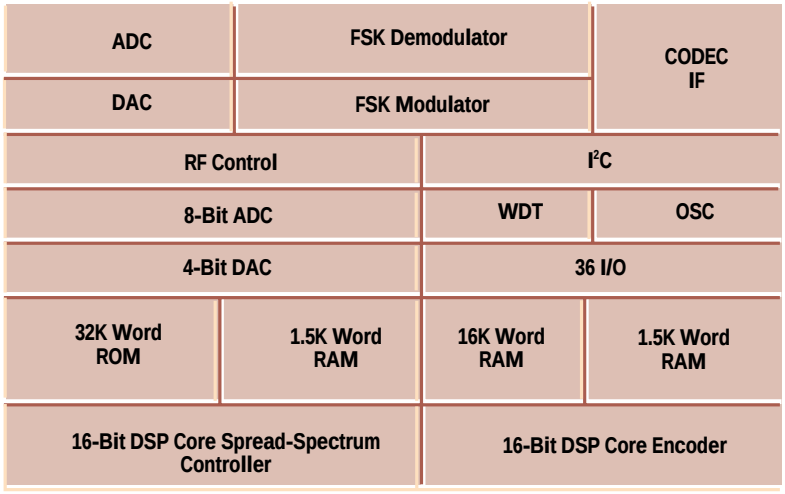
- Telemetry
- Handheld data terminals
- Point-of-sale terminals
- Cordless phones
- Vending machines
- Digital home remote control

Z87L02/L03

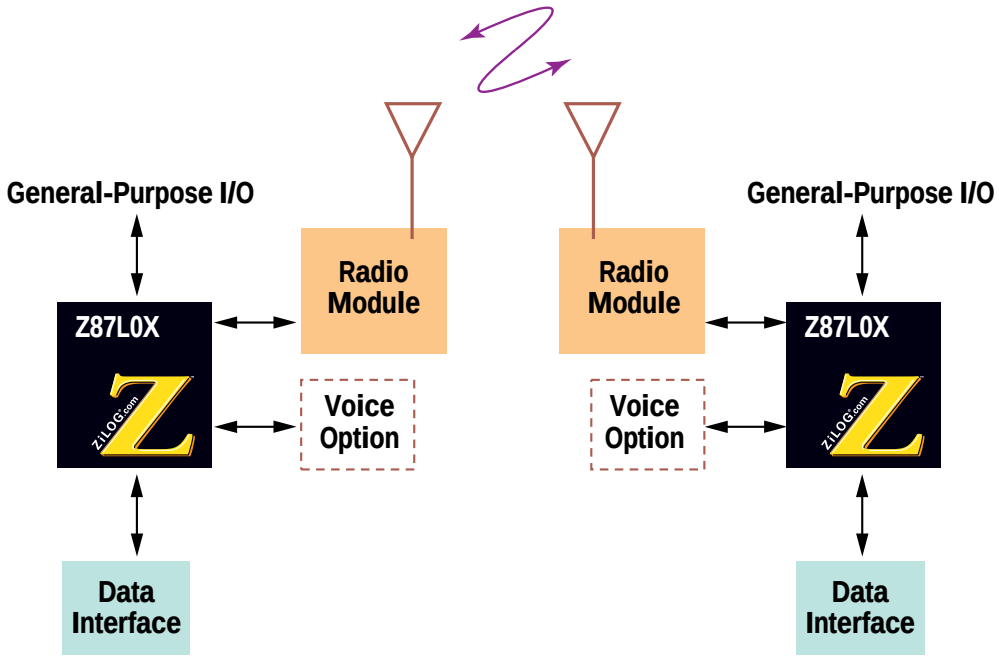
Features

- Dual-DSP Core Processor
- 32 Kbps Voice or Data
- 2 Kbps Signaling Control
- FSK Modem
- Full-Duplex
- Adaptive Frequency Hopping
- RF Control
- Flash Option
- I²C Interface
- 36 Input/Output Ports
- Low Current Consumption
- 2.7V to 3.3V, -20º to 70ºC

Product Block Diagram



System Block Diagram



Support Tools

Emulator	Z87L0200ZEM
Evaluation Kit	Z87L0200100ZCO
ZProbe	Z8700000ZAC
C-compiler	Z893XXW0ZSW
Flash	Z87M0216FSC

Additional Support Documentation: www.zilog.com/wave