

### ■ Features

The ML7037-003 is an IC device developed for portable, handsfree communication with built-in line echo canceler, acoustic echo canceler, and transmission signal noise canceler. Built-in to the voice signal interface is a Linear CODEC for the analog interface on the acoustic-side, and another Linear CODEC for the analog interface on the line-side. On the line-side, In addition to the analog interface, there is also a  $\mu$ -law PCM/16-bit linear PCM digital interface. The ML7037-003 is performance-enhanced successor device to the ML7731 has achieved more than 10 million pieces sales record. The ML7037-003 is ideally suited for a handsfree system.

### Applications

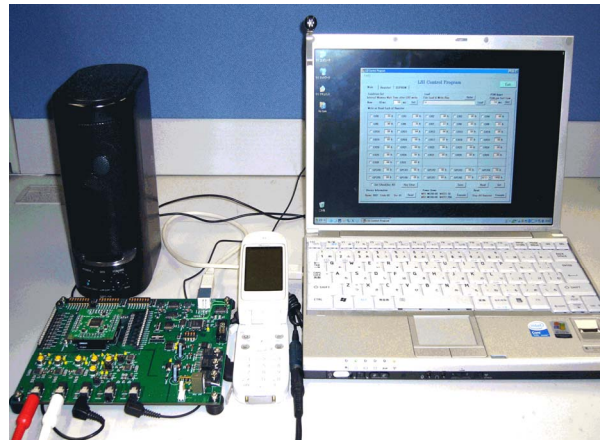
- Hands-free solutions
  - Hands-free car kit
  - GPS
  - Intercom
  - Teleconference system
  - VoIP
  - STB

### ■ Specifications

ML7037-003	
Supply voltage	Single 3.3V Power Supply Operation (3.0 to 3.6) [with built-in regulator to generate internal power supply]
Master clock frequency	12.288MHz (crystal unit the ML7037's built-in driving circuit for a crystal unit or a crystal oscillator)
PCM I/F coding formats	$\mu$ -law PCM (G.711), 16-bit linear PCM
PCM I/F sync format	Long frame synv / Short frame sync
General purpose I/O	16 GPI's and 8 GPO's
Analog output configuration	Push-pull drive (can drive a 2k $\Omega$ load)
Analog input gain amp's	Acoustic side=2 stages; Line-side=1 stage
ECHO canceler	Built-in 2-channel (line and acoustic) echo canceler
	Echo attenuation: 60dB (typ) for white noise using NLP
	Cancelable echo delay time: Tacoud=64ms (max) Tlined=20ms (max)
Built-in transmission noise canceler	6dB, 9dB, 13dB, 18dB (White noise)
ALC (Auto Level Controller)	Receive-side ALC
Equalizer	Transmission signal equalizer
Slope filter	A slope filter on transmit side
Package	64-pin plastic TQFP (10mm $\times$ 10mm)
The others	Programmable Gain/Mute etc.

This is provisional specification and may be changed.

### ■ Development Tools / Software



This evaluation kit is designed to facilitate evaluation of the ML7037 manufactured by Oki Electric Co., Ltd.

The evaluation kit comprises as follows

- An evaluation board (ML7037 EVA BOARD, ML7037-003 chip board)
- A uni-directional electret microphone
- 3.5mm  $\phi$  monaural audio plugs (3pcs)
- USB Cable [AB Type]
- A power cord for the evaluation board
- A 10-pin flat cable
- A CD-ROM (containing PC control software)

### ■ Block Diagram

