# **RENESAS** Tool News

#### RENESAS TOOL NEWS on December 16, 2008: 081216/tn3

## M3S-DTMF-Tiny V.1.00 Release 00 (the DTMF Library for the R8C MCU Family) Published

We have published M3S-DTMF-Tiny V.1.00 Release 00, the DTMF library for the R8C MCU family. We will supply this library free of charge.

#### 1. Outline of the Product

M3S-DTMF-Tiny is a software library for generating and detecting DTMF (Dual Tone Multi Frequency) tones. By using this library, you can introduce DTMF tones generation and detection capabilities to your systems designed with MCUs of the R8C family.

DTMF tones are used for a signaling system of push-button telephones, phone-answering machines, call center equipment operations, remote control by using the telephones handset, toys, and other applications.

#### 2. Features

- (1) Generates tones by using a tone data table (a sampling frequency of 16 kHz), which lightens the load on the CPU.
- (2) Outputs tones by using the PWM (Pulse Width Modulation) technique and the D/A conversion system.
- (3) Compactly designed for embedded systems; for instance, memory consumption is as follows:

For tone generation: about 16 kilobytes of ROM, 0 bytes of RAM, and 6 bytes of stack

For tone detection: about 3 kilobytes of ROM, about 160 bytes of RAM, and about 60 bytes of stack

(4) Includes sample programs built in the workspace of High-performance Embedded Workshop.

In the sample programs are included the sample drivers for PWM output and A/D-converter input.

### **3.** How to Apply for the Product

For how to apply for the product, go to the following Web site and see the product page of M3S-DTMF-Tiny:

http://www.renesas.com/mw/dtmf

The above URL is that of our global site (in English).

#### [Disclaimer]

The past news contents have been based on information at the time of publication. Now changed or invalid information may be included. The URLs in the Tool News also may be subject to change or become invalid without prior notice.

© 2010-2016 Renesas Electronics Corporation. All rights reserved.