S1V3S344

EPSON
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Voice Guidance LSI

■ Overview

The S1V3S344 is an LSI incorporating built-in flash memory for voice data and featuring pin compatibility with existing S1V3034x Series devices*. It features high-compression, high-quality audio decoding functions, built-in voice data flash memory, and a DA converter, making it ideal for use in voice guidance products. The voice data creation tool for EPSON voice guidance LSI allows easy creation of high-quality voice data without the need for studio recording. All functions are controlled by commands via a serial interface for easy addition to any existing system incorporating a host.

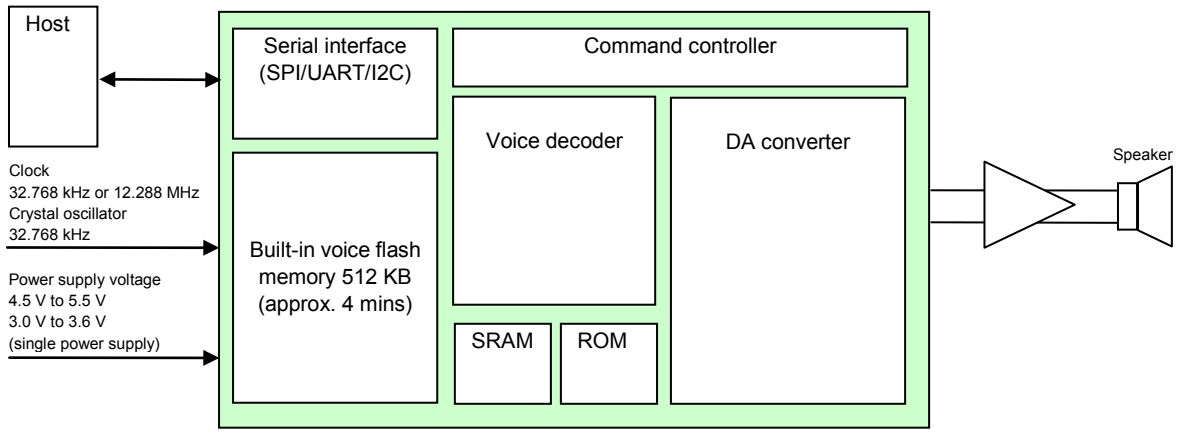
* External parts differ from S1V3034x Series devices.

■ Features

- **Audio playback**
  - High-compression, high-quality audio decoder (proprietary Epson data format)
  - Bitrate: 40 kbps, 32 kbps, 24 kbps, 16 kbps
  - Sampling rate: 16 kHz
- **Sequencer function (phrase interval setting)**
  - Sequence setting for up to 64 phrases (unlimited combinations)
  - Variable phrase interval delay setting: 0 ms or 20 ms to 2,047 ms (in 1 ms steps)
- **Voice data built-in flash memory**[*1]
  - Incorporates the following memory for voice data
    - 512 kbytes (approx. 4 minutes/16 kbps)
    - Erase/write cycles: 10,000 cycles (typ.)
      1,000 cycles (min)
      Data retention: 10 years (min)
- **Host interface**
  - Clock synchronized serial interface, supporting UART and I2C
  - Command control
- **High-quality 16-bit DA converter**
  - Sampling rate (f_s): 16 kHz
  - Input bits: 16 bits
- **Clock**
  - Clock input: 32.768 kHz or 12.288 MHz
  - Crystal oscillator: 32.768 kHz
- **Package**
  - QFP-52pin (10 mm × 10 mm) 0.65 mm pin pitch
- **Power supply voltage**
  - 5.0 V ±0.5 V (single power supply)
  - 3.3 V ±0.3 V (single power supply)

■ Standard application system

The S1V3S344 standard application system is configured as shown in the diagram below. The S1V3S344 is command-controlled by the host using a messaging protocol via the serial interface.
Controlled by commands sent from the host via the serial interface after power-on resetting, the S1V3S344 outputs voice audio while internally decoding and processing internal or streamed (via host command transfer) compressed audio data.

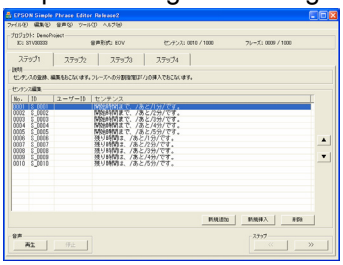


■ Development Tools

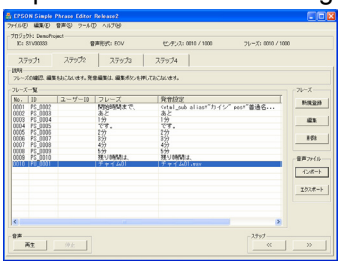
- Evaluation board
- Voice data creation tool
- Sample programs

[Voice data creation tool overview]

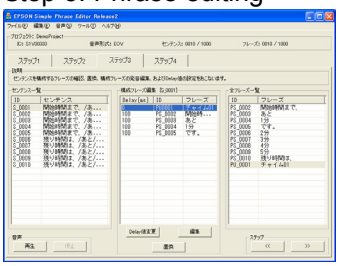
Step 1: Voice guidance registration



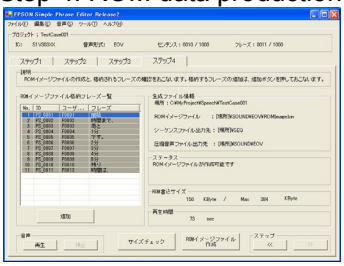
Step 2: Pronunciation editing



Step 3: Phrase editing



Step 4: ROM data production



・Supported languages : English, Japanese, Korean (all female voices)

*1 The flash memory technology used in this product is used under license of Silicon Storage Technology, Inc. in the USA.

SEIKO EPSON CORPORATION

MICRODEVICES OPERATIONS DIVISION

Device Sales & Marketing Department
421-8 Hino, Hino-shi, Tokyo 191-8501, JAPAN
Phone: +81-42-587-5814 FAX: +81-42-587-5117

EPSON semiconductor website

http://global.epson.com/products/semicon/

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