

## Voice Guidance LSI

### ■ Overview

The S1V3G340 is an LSI incorporating high-compression, high-quality audio decoding functions, external SPI flash memory interface, 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. Use of external SPI flash memory allows easy interchanging of voice data. Additional voice data can be transferred from a host when required. General-purpose output ports are provided to allow flexible system design. All functions are controlled by commands via a serial interface for easy addition to any existing system incorporating a host. The S1V3G340 offers pin compatibility with the S1V3034x Series\* facilitating substitution to suit system configurations.

The S1V3G340 will help users reduce time-to-market for products incorporating built-in voice guidance functions.

\* External parts differ from S1V3034x Series devices.

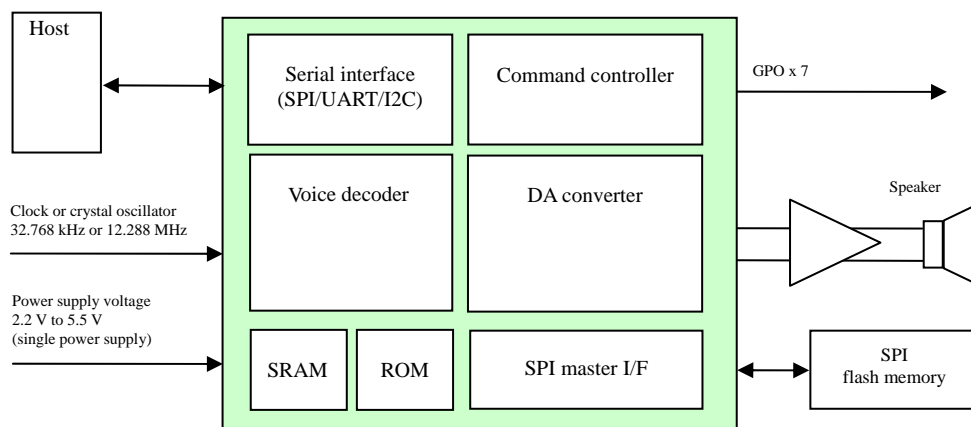
### ■ Features

- **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)
- **External SPI flash memory interface**
  - Clock synchronized serial interface (SPI)
  - Maximum approx. 128 mins (16 Mbytes)
- **GPO**
  - 7 pins
- **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-52 pin (10 mm × 10 mm) 0.65 mm pin pitch
- **Power supply voltage**
  - 2.2 V to 5.5 V (single power supply)

### ■ Standard application system

The S1V3G340 standard application system is configured as shown in the diagram below. The S1V3G340 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 S1V3G340 outputs voice audio while internally decoding and processing internal or streamed (via host command transfer) compressed audio data.



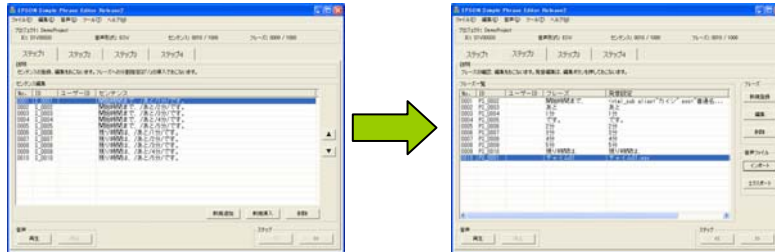
# S1V3G340

## ■ Development Tools

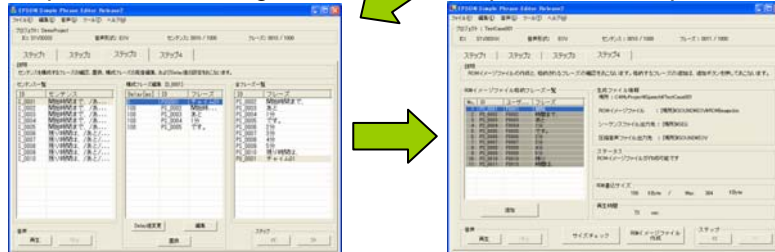
- Evaluation board\*1
- Audio data creation tool\*2
- Sample programs

[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)  
In planning stage : Spanish, Chinese

\*1 For evaluation of S1V3G340 use S1V3S344 Evaluation Board incorporating 512-KB flash memory.

\*2 The audio data creation tool uses PENTAX "VoiceText" voice synthesis technology. "VoiceText" is a registered trademark of Voiceware Co., Ltd.

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