

S1V30080 Series Evaluation Kit Start Guide

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1. Introduction

This document describes the basic procedures for using the S1V30080 Series evaluation kit immediately after purchase.

1.1 Overview

This evaluation kit supports the creation, writing to flash memory, and playback of data (voice/melody).

This document describes the procedures for using the evaluation kit.

1.2 Evaluation kit configuration

The evaluation kit is made up of a number of tools. These tools are listed in Table 1.1.

Table 1.1 Evaluation kit configuration

Tool	Purpose
EPSON Speech IC Speech Guide Creation Tool (Ver 1.1 or later)	For creating voice data.
S1V30080 Series Sound Tool	For creating melodies and ROM image files.
CASTLE board	For writing data to the flash memory on the Cinderella board.
Cinderella board	For sound quality evaluation and debugging with the host CPU.

1.3 Before use

Before using the evaluation kit, download the S1V30080 Series Sound Tool from the “Evaluation Kit Download Site” on the Seiko Epson Semiconductor Device website. The Evaluation Kit Download Site requires registration for each product series, separate from the “Speech & Audio Users’ Site.” Please follow the instructions on the information sheet included with the Cinderella board for registration.

2. Usage Procedures

2. Usage Procedures

Figure 2.1 shows the procedure for using the evaluation kit.

For details, refer to the corresponding numbered explanations below.

(1) Create voice data

Create voice data using the EPSON Speech IC Speech Guide Creation Tool.

The voice data created (with *.erv extension) is used by the S1V30080 Series Sound Tool.

For more information, refer to the *EPSON Speech IC Speech Guide Creation Tool User Guide*.

(2) Create melody data

Create melody data using the S1V30080 Series Sound Tool. This tool also creates a ROM image file (ROMImage*.bin)^{*1}.

The voice data (with *.erv extension) created using the EPSON Speech IC Speech Guide Creation Tool is required when creating the ROM image file.

For more information, refer to the *S1V30080 Series Sound Tool User Guide*.

(3) Write data created to flash memory

Write the data to the flash memory on the Cinderella board using the CASTLE board. Data can be written to the flash memory by copying the ROM image file (ROMImage_yymmdd_hhmmss.bin) created using the S1V30080 Series Sound Tool to the Micro SD card provided and inserting this in the CASTLE board.

For more information, refer to the *S1V30080 Series Evaluation Board User's Guide*.

(4) Play back data created

Once the ROM image file (ROMImage_yymmdd_hhmmss.bin) has been written to the flash memory on the Cinderella board, data can be played back using the Cinderella board. The Cinderella board can be connected to the customer's host CPU and used for checking sound quality and for debugging programs on the host CPU. Standalone operation using the Cinderella board on its own is also possible for checking sound quality.

For more information, refer to the *S1V30080 Series Evaluation Board User's Guide*.

Note 1: ROM image file has two kinds of the following.

「ROMImage_yymmss_hhmmss.bin」

- For the flash memory

「ROMImage_yymmss_hhmmss_for_Mask.bin」

- For ordering a mask ROM.

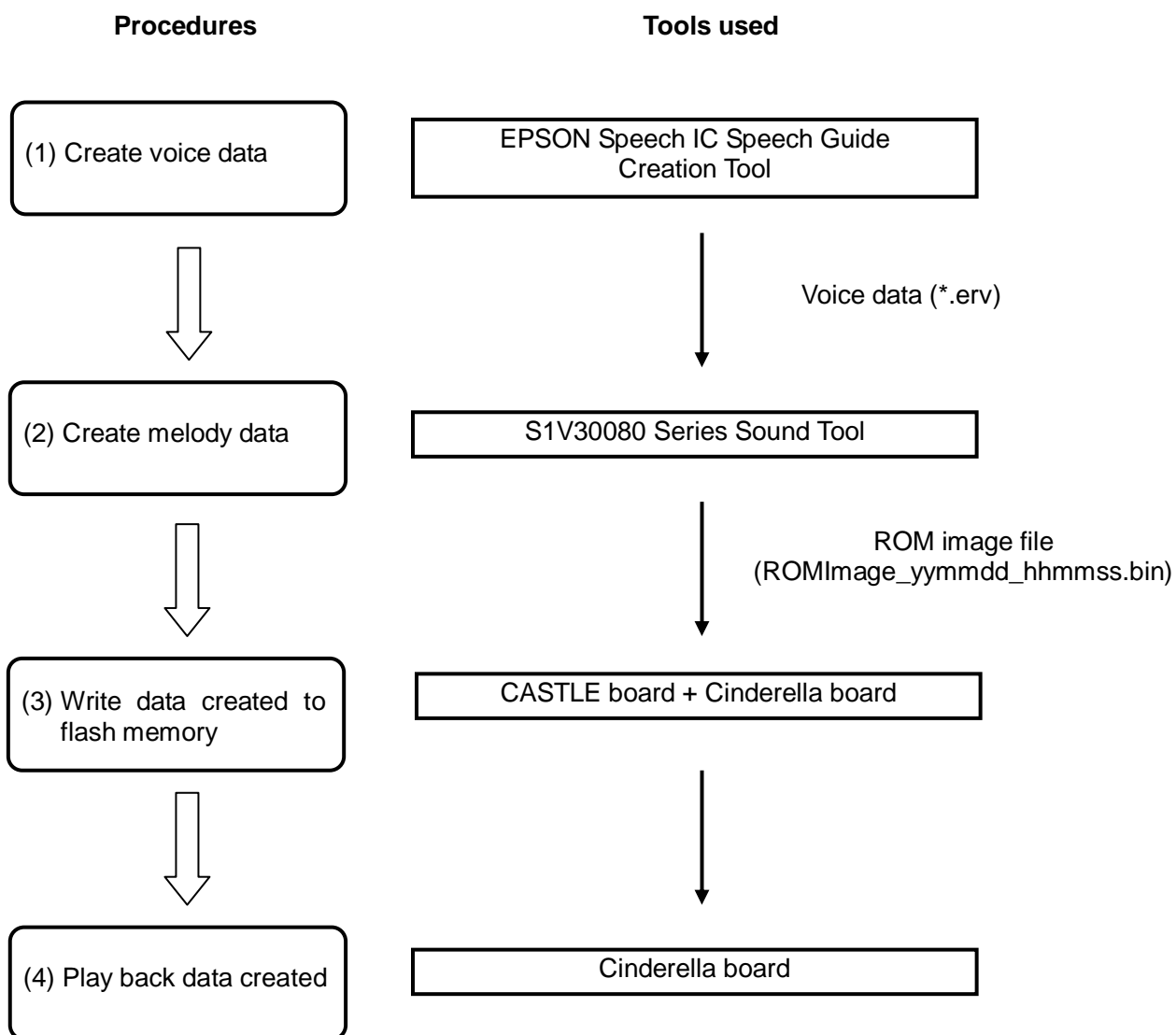


Figure 2.1 Evaluation kit usage procedures

3. Usage Precautions

3. Usage Precautions

The usage precautions for the evaluation kit are described below.

3.1 Number of quantization bits allowing flash playback

Data with 8-bit quantization cannot be played back when using flash memory. The EPSON Speech IC Speech Guide Creation Tool must therefore be set to 10-bit or 8F-bit^{*1} when creating voice data.

When creating data for use with the internal ROM, use 8-bit or 10-bit settings.

For more information, refer to the *S1V30080 Series Message Protocol Specification*.

Note 1: 8F-bit is pseudo-8-bit for flash checking purposes. Customers creating mask ROM using data with 8-bit quantization should use 8F-bit data for sound quality checking using flash memory. The DAC bit width should be selected as 10-bit when 8F-bit data is selected.

3.2 Data formats allowing Cinderella board playback

The Cinderella board is equipped with a 16.384 MHz clock. When playing back voice data using the S1V30080, the internal clock must be selected to suit the voice data sampling frequency and quantization bits. For this reason, some data formats (see Table 3.1) may not be able to be played back using the internal clock on the Cinderella board with divisions of 16.384 MHz. To play back these data formats, either the sampling frequency should be reduced, or the oscillator on the Cinderella board should be replaced.

For more information on the correlation between voice data and clock frequency, refer to Section 5.2.1, “ISC_CLKDIV_CONFIG_REQ” in the *S1V30080 Series Message Protocol Specification*.

Table 3.1 Combinations allowing playback when using 16.384 MHz clock (with flash memory)

		Sampling frequency				Remarks
		4 kHz	8 kHz	12 kHz	16 kHz	
Number of quantization bits	8-bit					Flash cannot be used with 8-bit.
	10-bit	✓	✓		✓	Flash can be used.
	8F-bit	✓	✓		✓	Flash can be used.

3.3 Mask ROM ordering

Sound quality and operation must always be checked using flash memory on the Cinderella board before ordering a mask ROM. Please confirm that there are no problems before ordering a mask ROM.

When ordering a mask ROM after evaluation with flash memory, please check that the voice data content matches the initialization information (clock division ratio, sampling frequency, and DAC bit width). For example, note that if the internal ROM is created in 8-bit with 8F-bit evaluation using flash memory on the Cinderella board (16.384 MHz clock), the clock division ratio and DAC bit width must be altered as shown in Table 3.2 (for a sampling frequency of 8 kHz). The voice data must also replace 8F-bit with 8-bit at this time.

Table 3.2 Example initialization information change for flash evaluation and internal ROM

	Clock division ratio	DAC bit width
Flash evaluation (8F-bit)	2	10-bit
Internal ROM (8-bit)	8 ^{*1}	8-bit

Note 1: For 16.384 MHz clock on customer's board

Revision History

[illegible]

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