

S1V30120 Evaluation Kit User Guide

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1. Introduction

1.1 Scope

The User Guide documents the contents and use of the S1V30120 Evaluation Kit.

The S1V30120 Evaluation Kit is designed to use the S1V30333/300/120 Evaluation Board. The S1V30333/300/120 evaluation board is used to provide a bridge from a USB link to a SPI link that controls the S1V30120. Further details of the S1V30333/300/120 evaluation board can be found in the S1V30333/300/120 Evaluation Board User Guide.

The S1V30120 evaluation kit software supports the Microsoft Windows 2000 and XP operating systems.

1.2 Document Structure

Section 2 gives a list of S1V30120 evaluation kit contents.

Section 3 gives an overview of the S1V30120 Evaluation System. Section 3 gives details on how to install and set-up the evaluation system. Section 4 gives details on running the S1V30120 evaluation applications.

2. Evaluation Kit Contents

2. Evaluation Kit Contents

2.1 Evaluation Kit Contents

Item	Description
S1V30333/300/120 evaluation board	S1V30333/300/120 evaluation board
USB Cable	It connects PC to the board.
USB Driver(FTDI Driver) software	Windows driver
S1V30120 Evaluation GUI Application	This application controls S1V30120.
ADPCM Encoder software	This software makes ADPCM compressed data which can be played back on S1V30120.
S1V30120_INIT_DATA	This binary data is S1V30120 download firmware which initializes S1V30120. Customer needs to load this data to S1V30120 by ISC_BOOT_LOAD_REQ message protocol.
S1V30120 sample software	This software is host cpu's sample program.
S1V30120_eval_kit_user_guide.pdf	User Guide for Evaluation Kit. Read this document to install and setup the evaluation kit.
S1V30120_Hw_spec.pdf	S1V30120 Datasheet
S1V30333/300/120_eval_board_user_guide.pdf	S1V30120 Evaluation Board User Guide
S1V30120_eval_kit_user_guide.pdf	This document
S1V30120_message_protocol.pdf	S1V30120 Message Protocol Specification
S1V30000_series_gui_guide.pdf	30000 GUI Guide
S1V30120_gettingstarted_guide.pdf	Getting Started Guide for System Developers
s1v30120_data_pack.exe	Data Packaging tool (with library.zip and python25.dll)
S1V30120_sample_software_specification.pdf	Host CPU's sample software specification
EpsonDEctalk501.pdf	DEctalk is TTS Engine of S1V30120. This is it's manual.
udict	This is a PC tool to create the data used by ISC_TTS_UDICT_DATA_REQ.
DicBuildTool.pdf	udict tool's manual
build_udic_load_script.pl	This is a perl script to convert from the data of udict to *.isc script which is used by GUI PC application.
Version.txt	Version description

3. System Overview

3.1 System Description

The diagram in Figure 2 presents the full S1V30120 evaluation system. A brief description of each component is provided in this figure. The evaluation system consists of the S1V30333/300/120 evaluation board that include a protocol bridge.

Figure 1 shows the S1V30333/300/120 evaluation board.

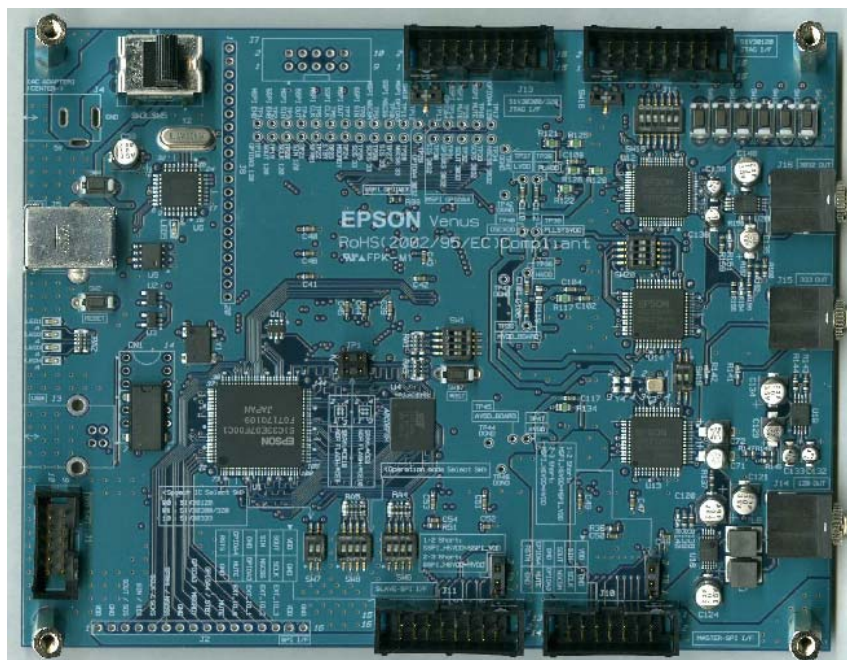


Figure 1 S1V30333/300/120 Evaluation Board

The overall system operation consists of a PC running evaluation software sending messages using the S1V30120 message protocol to the bridge over the USB link. The bridge in the board stores the message, and then forwards it on the SPI link to the S1V30120.

The first messages sent to the S1V30120 are used to download additional system firmware and patches over the SPI link. Once the main audio decoder firmware is running, then audio data is transferred across the SPI link, and decoded. Analogue data is output, which can be sent to speakers or headphones.

3. System Overview

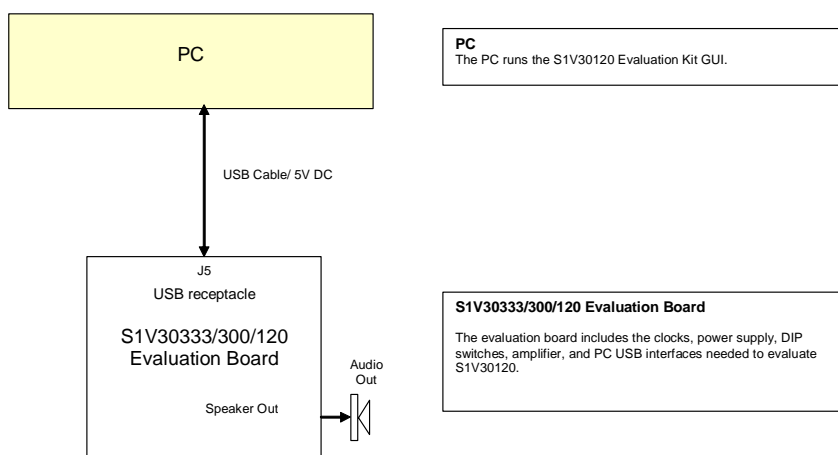


Figure 2 S1V30120 Evaluation System

4. Evaluation Kit Installation

4.1 Components Supplied

The S1V30120 Evaluation Kit has the following components:

1. S1V30333/300/120 Evaluation Board .
2. S1V30120 Evaluation Kit Release 2.0 Installation CD-ROM

4.2 Installation

Follow the steps below to install the Evaluation Kit.

4.2.1 Install S1V30120 Evaluation Kit on PC.

The S1V30120 Evaluation Kit Firmware is provided as a self-installing executable on the CD-ROM. The **setup.exe** file will run automatically. If the **setup.exe** file doesn't start automatically, run the file **setup.exe** from Windows Explorer

4.2.2 Configuring the evaluation board

Fig. 4-1 and 4-2 show the different DIP switch on/off states in the evaluation board. The black section indicates the DIP switch position.

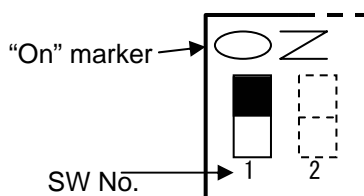


Fig. 4-1 DIP switch on

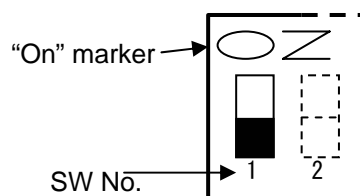


Fig. 4-2 DIP switch off

The DIP switch (SW7,SW8,SW1,SW6,SW15) and the Jumper Pin (JP1) on the S1V30333/300/120 evaluation board should be configured as shown in Table 4-1,4-2,4-3,4-4,4-5,4-6

Table 4-1 Audio IC selector switches(SW7) and LED1 to LED3 states

Setting (binary)	SW7		LED			Description
	1	2	1	2	3	
00	OFF	OFF	On	Off	Off	S1V30120

4. Evaluation Kit Installation

Table 4-2 Mode selector switch(SW8)

Setting (binary)	SW8				Description
	1	2	3	4	
0000	OFF	OFF	OFF	OFF	PC host

Table 4-3 Multi-function selector switch(SW6)

SW6	Description	Setting
SW6-1	Audio IC I/F selection	OFF
SW6-2	UART selection	OFF
SW6-3	Mode register setting	OFF
SW6-4	Reset selection	OFF

Table 4-4 General switches(SW1)

SW1	Description	Setting
SW1-1	–	OFF
SW1-2	–	OFF
SW1-3	–	OFF
SW1-4	–	OFF

Table 4-5 S1V30120 GPIO settings(SW15)

SW15	Description	Setting
SW15-1	GPIOA0	ON
SW15-2	GPIOA1	ON
SW15-3	GPIOA2	OFF
SW15-4	GPIOA3	OFF
SW15-5	GPIOA5	OFF
SW15-6	–	OFF

Table 4-6 JP1 settings

JP1 setting	Remarks
1 to 3pin Short, 2 to 4pin Short	Default

4.3 Install Software Driver for USB/UART Converter on PC

The FTDI USB/UART device driver software is included within the evaluation kit. Its installation is started by Microsoft Windows® hot-plugging support after connecting S1V30333/300/120 evaluation board via the supplied USB cable. The FTDI driver installed should be manually navigated to and installed from the supplied installation CD. For a detailed guide to installation please see the USB UART IC(FT232BL) software driver's installation guide document on the Future Technology Devices International Ltd (FTDI Chip) web site. .

4. Evaluation Kit Installation

4.4 ADPCM Encoder

The usage of the ADPCM encoder is described below.

```
> slv30120_adpcm_encoder.exe
```

```
WAV(Linear PCM) to ADPCM encoder (slv30120_adpcm_encoder) Version 1.02
```

```
Copyright(c) SEIKO EPSON CORP. 2007 All rights reserved.
```

Usage:

```
slv30120_adpcm_encoder [options] input-file
```

```
-t [linpcm/adpcm] : select output file type (default is "adpcm")
```

```
-b [3/4/5]       : select encoding data rate by bit(kbps = bit x fs) - adpcm only (default is 3)
```

```
-o output-file   : Output ADPCM file (default is "<input-file>.adp")
```

Example:

```
slv30120_adpcm_encoder -b 3 -t adpcm sample.wav
```

5. Running the S1V30120 Evaluation GUI Application

Plug in the S1V30120 evaluation board using the USB cable provided in the S1V30100 evaluation kit. The S1V30120 GUI application, **S1V30120_eval_application**, can be found on the desktop. Double-click on the application icon. The main window will appear as in Figure 4. On starting the application, the appropriate COM Port, target device and target mode will already be chosen.

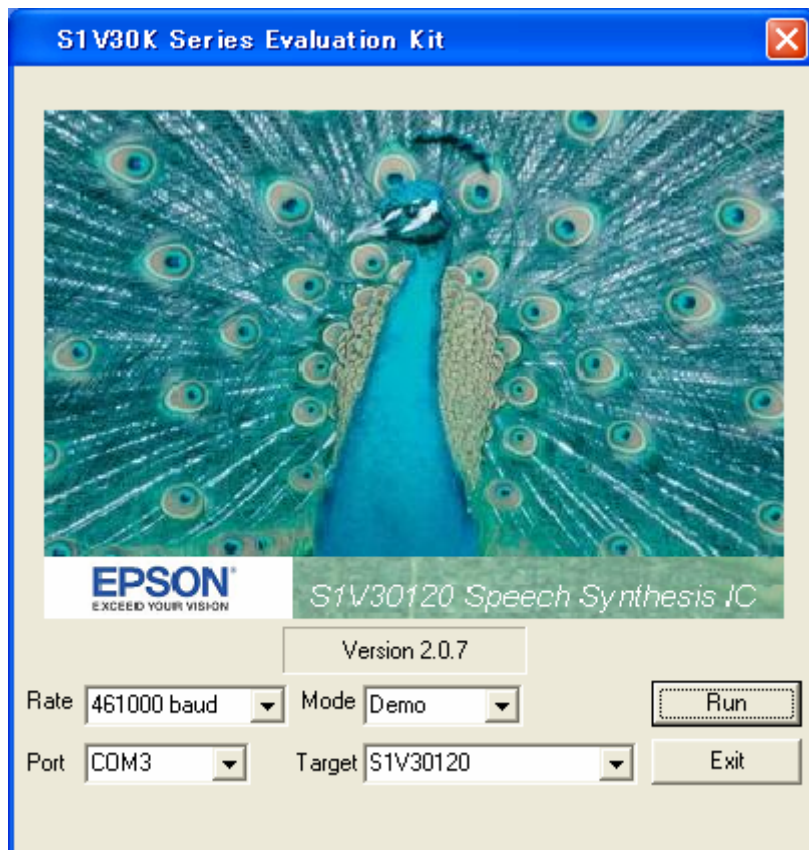


Figure 4 S1V30120 Main Application Window

5. Running the S1V30120 Evaluation GUI Application

5.1 Downloading the S1V30120 Firmware

1. The Download Scripts window will show the S1V30120 download script in the Script Listing window, and the Download Scripts button will be available. The window will look like Figure 6.

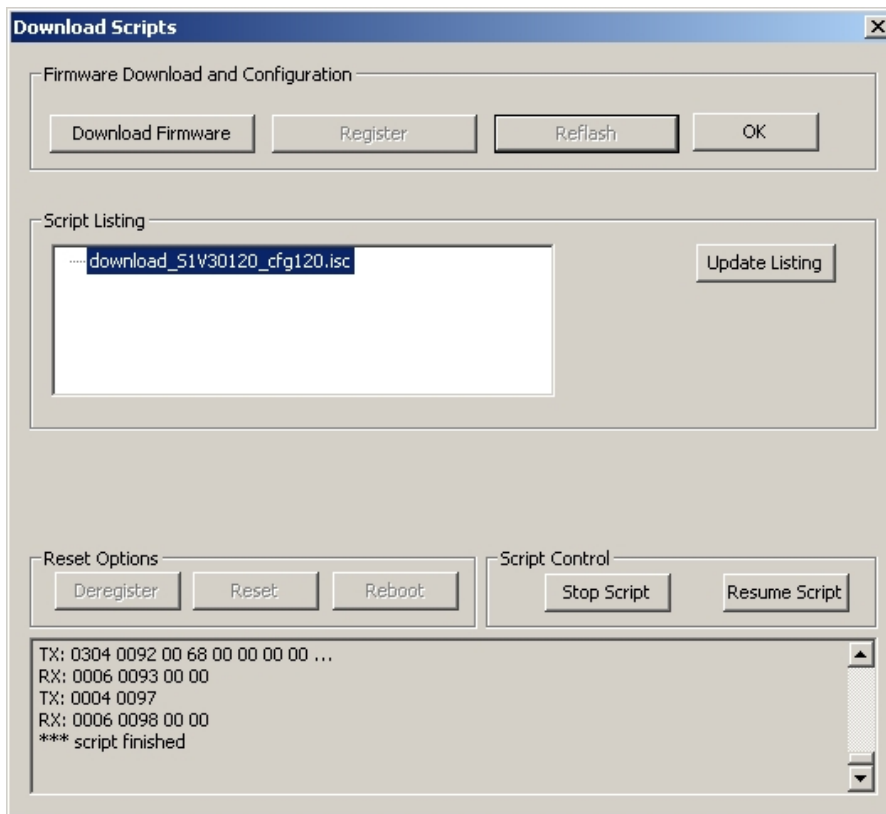


Figure 6 S1V30120 Download Scripts Window, Step 2

2. Click on the Download Firmware button. This will download the S1V30120 firmware.
3. Click on the Register Button. This will register the board and configure the DAC and the Power Management.
4. Click OK. This will bring the user to the Multilingual Text-to-speech tab for the S1V30120. This tab will be as shown in Figure 7.

5. Running the S1V30120 Evaluation GUI Application

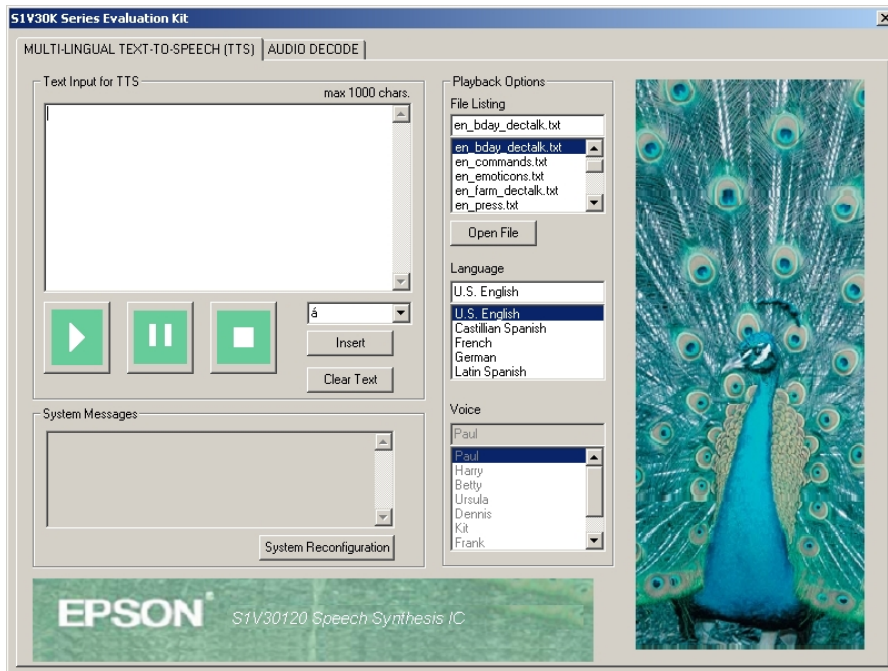


Figure 7 S1V30120 TTS Window

5. Running the S1V30120 Evaluation GUI Application

5.2 TTS Playback

Full instructions on running the TTS Panel can be found in the Application GUI User Guide. To quickly verify the evaluation kit has been configured correctly, perform the follow operations:

1. Click on the 'open file' button next to the 'file listing' window. This will open up the currently selected text file, and show the text in the 'Text Input for TTS' window.
2. Hit the Play button. The appropriate language will be selected, and audio playback can be heard by connecting a speaker or headphones to the board audio jack.

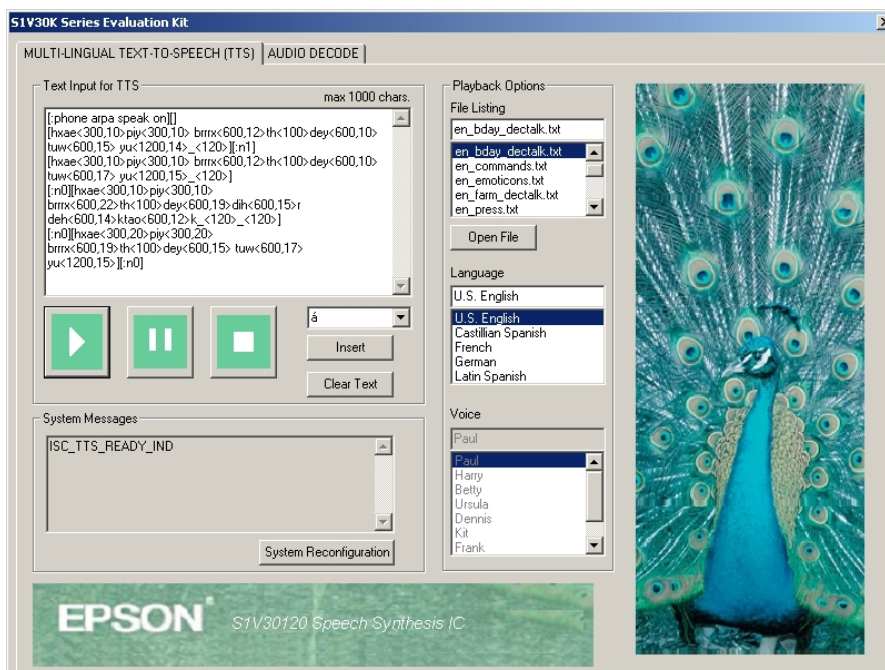


Figure 8 S1V30120 TTS Window Playback

- * Note that the Language windows displays many languages, but only US English, Castillian Spanish, and Latin Spanish are supported.

5.3 Audio File Playback

Full instructions on running the Audio Decoders can be found in the Application GUI User Guide. To quickly verify the evaluation kit has been configured correctly, perform the follow operations:

1. Double-click the 'playlist' directory, and any subsequent sub-directory until you get to an audio file. Select the audio file, and hit the play button. This will transfer the audio file to the playlist, and start to play. The decoded music/speech can be heard by connecting a speaker or headphones to the board audio jack.

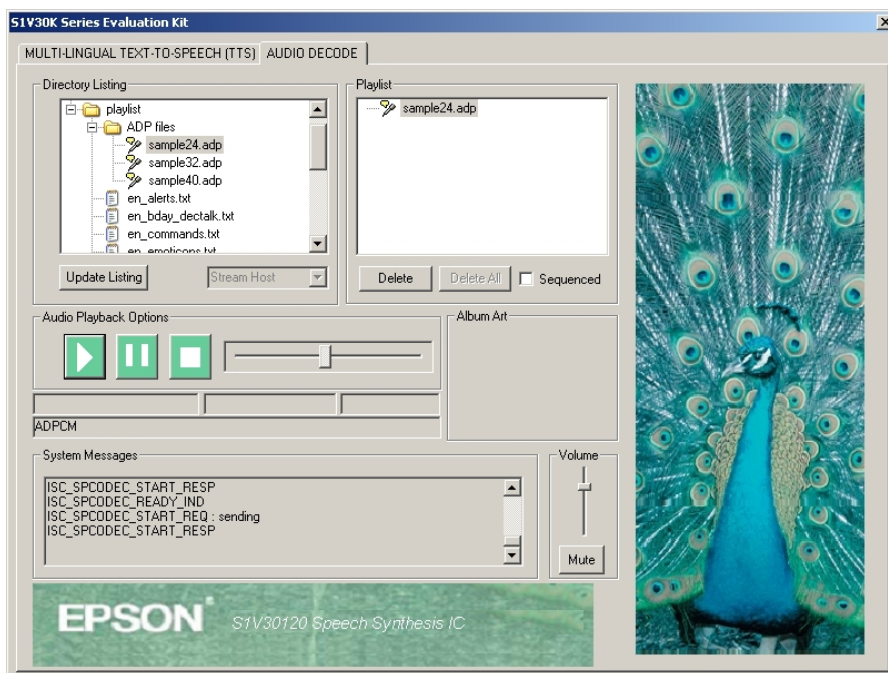


Figure 9 S1V30120 Audio Decode Window Playback

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