aP89 VOICE OTP DEVELOPMENT SYSTEM

USER GUIDE

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Introduction

aP89 Voice OTP Development System is designed to support Aplus' aP89 series Voice OTP chips. It supports the following devices:

- aP89042 (42 sec OTP chip)
- **aP89085 (85 sec OTP chip)**
- **aP89170 (170 sec OTP chip)**
- **aP89341 (341 sec OTP chip)**

This development system serves two main functions:

- **Compiler**
- **Writer**

The **Compiler** is used to combine edited voice file into the chip to form the desired Voice Group and to define the playback functions of each Voice Group by selecting the Whole Chip Option or the Trigger Options of individual Voice Group.

The **Writer** is used to program the voice data into the OTP devices processed by the Compiler Function. A Writer Board connected to the PC is required.

Installation

Hardware Installation

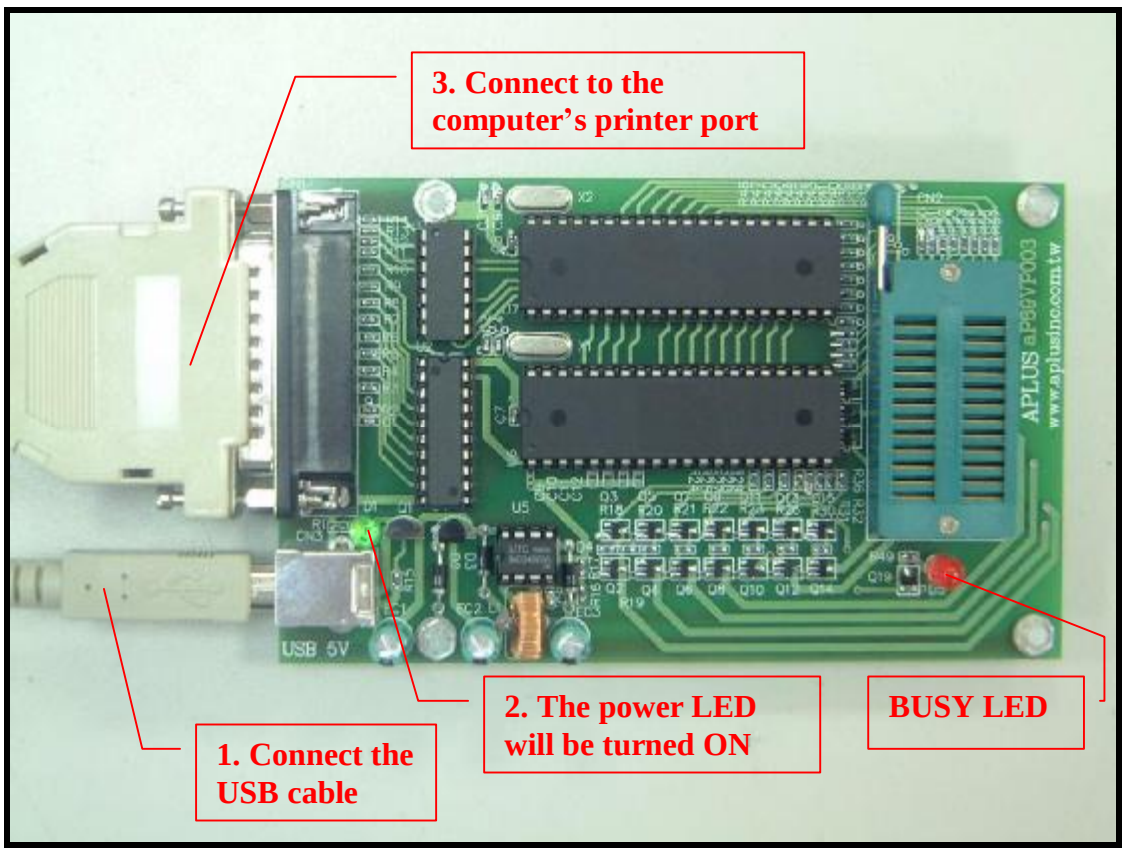
In order to use the writer properly, you must set the computer's printer port to **EPP mode**. It is normally set in the system BIOS during computer starts up.

Different computer will have different BIOS setup program, normally, the printer port mode can be set under the following steps:

1) enter system BIOS setup program.
2) select the "Advanced" menu.
3) select the "I/O Device Configuration" submenu.
4) select the item, "Parallel Port Mode".
5) change the mode into either "EPP" or "EPP 1.9" mode.
6) Save and Exit the BIOS setup program.
7) Start the computer again.

Writer Board Connection

1) Connect the USB cable first, the power indicator LED should be lightened.
2) Connect the printer port of the computer to the writer port.



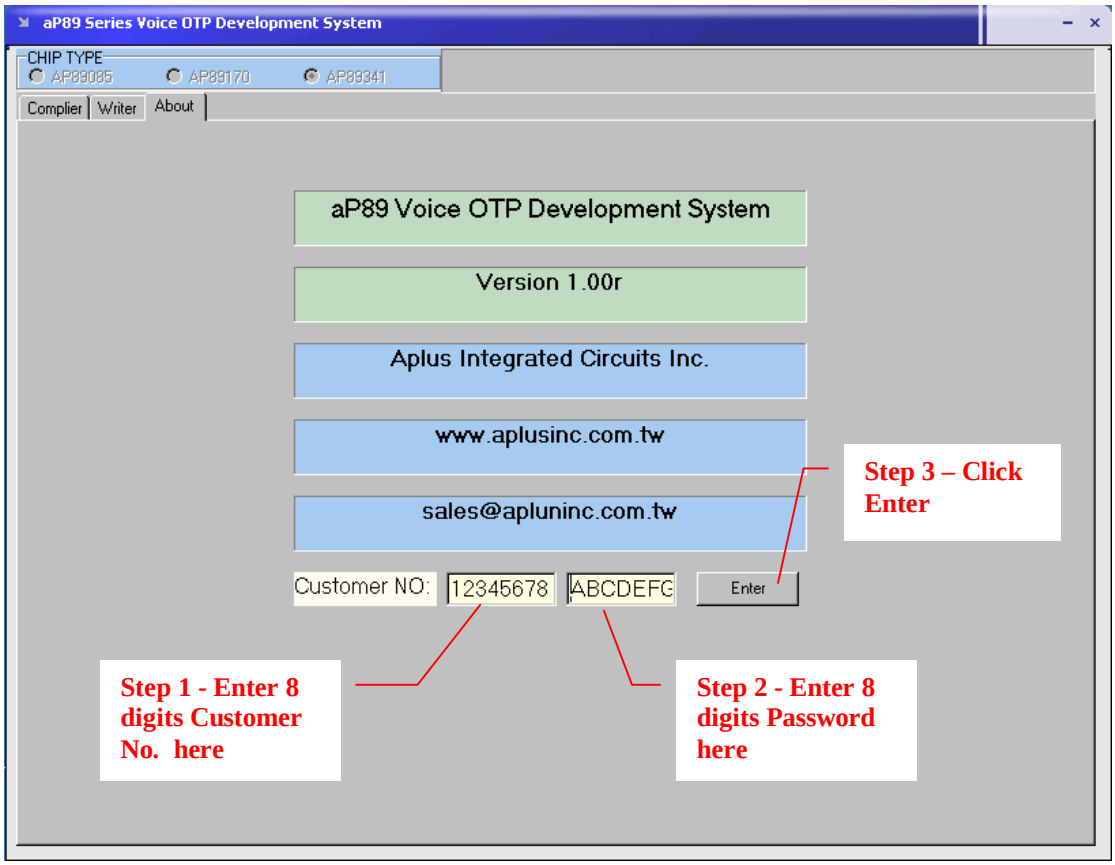
Software Installation & Registration

Create a new folder in your computer's Hard Drive. Copy the .ZIP archive file, aP89_xxx.ZIP to the directory, where "xxx" represents the version number of the software. Unzip the file and double click the **INSTALL.EXE** to install the required software drivers for the first time you install this program.

Double click the file **aP89.EXE** to launch the software. At that time, the **BUSY LED** should be flash for a few seconds. This indicates the hardware and software are correctly set up.

If the BUSY LED does not flash, it indicates the computer's printer port is not correctly set to the **EPP** mode.

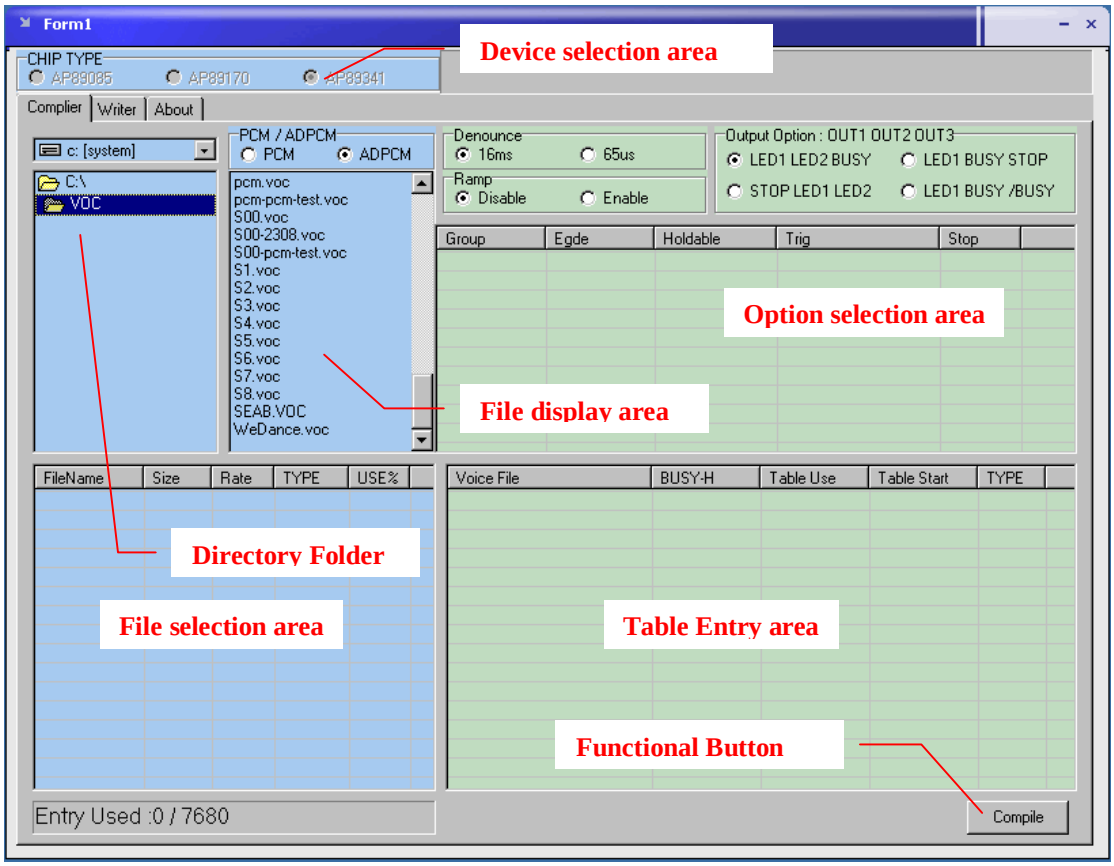
Click the **About** tab and you will see two empty boxes near the bottom of the window. Enter the registration number provided and click the **Enter** button on the left to finish the registration. Successful registration will enable all functions provided by the software. Otherwise, you cannot save your finished work and cannot program the OTP devices.



Compiler

When the aP89 Voice OTP Development System is launched, the Compiler Window is displayed. The Compiler Window consists of the following areas:

- **Directory Folder** area: display the current directory path
- **File Display** area: display a list of voice files in the current directory
- **Option Selection** area: show the user selected options
- **File Selection** area: show the selected voice files
- **Table Entry** area: show the combination of voice files in each Voice Group
- **Device Selection** area: allow user to select which OTP chip to be used
- **Function Buttons**: to perform the specific functions



Voice data and user selectable options must be set up and combined together to form a DPM file before it can be programmed into the Voice OTP device. The following procedures describe step by step how to compile the voice data and options to produce the DPM file for programmed into the chip.

Step 1 – Select Device

- click the "small dot" beside the device name to select the device you work on

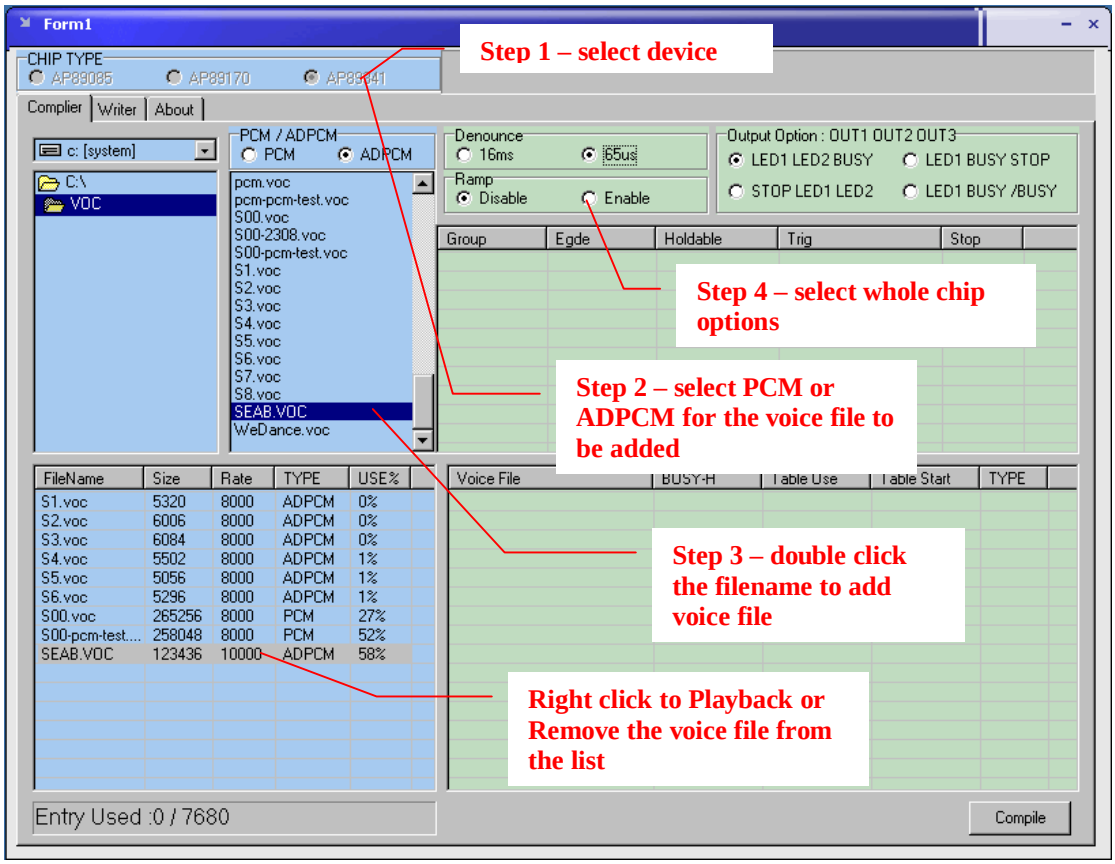
Step 2 – Adding Voice Files

- set the coding format, "ADPCM" or "PCM", for the input voice file
- click the "down arrow" to select the Hard Drive
- double click the "Folder" where your edited Voice Files are located
- a list of file with ".VOC" or "WAV" file extension is displayed in the File Display area
- double click the Voice File you want to add
- the selected Voice File will be displayed in the File Selection area
- right click the Voice File, you can playback or remove the selected file

Step 3 – Selecting the Whole Chip options

- Select the Audio Output and Trigger Mode by **clicking** the small dots besides.

Tips: When you connect the speak or buzzer directly to the VOUT1 or VOUT2 pins, the Ramp Disable (Vout[PWM]) option should be selected. On the other hand, if you connect speaker through a transistor to the COUT pin, the Ramp Enable (Cout[DAC]) option should be selected.



Step 4 – Selecting the Individual Voice Group Options

Each Voice Group can have its only triggering and output setting options.

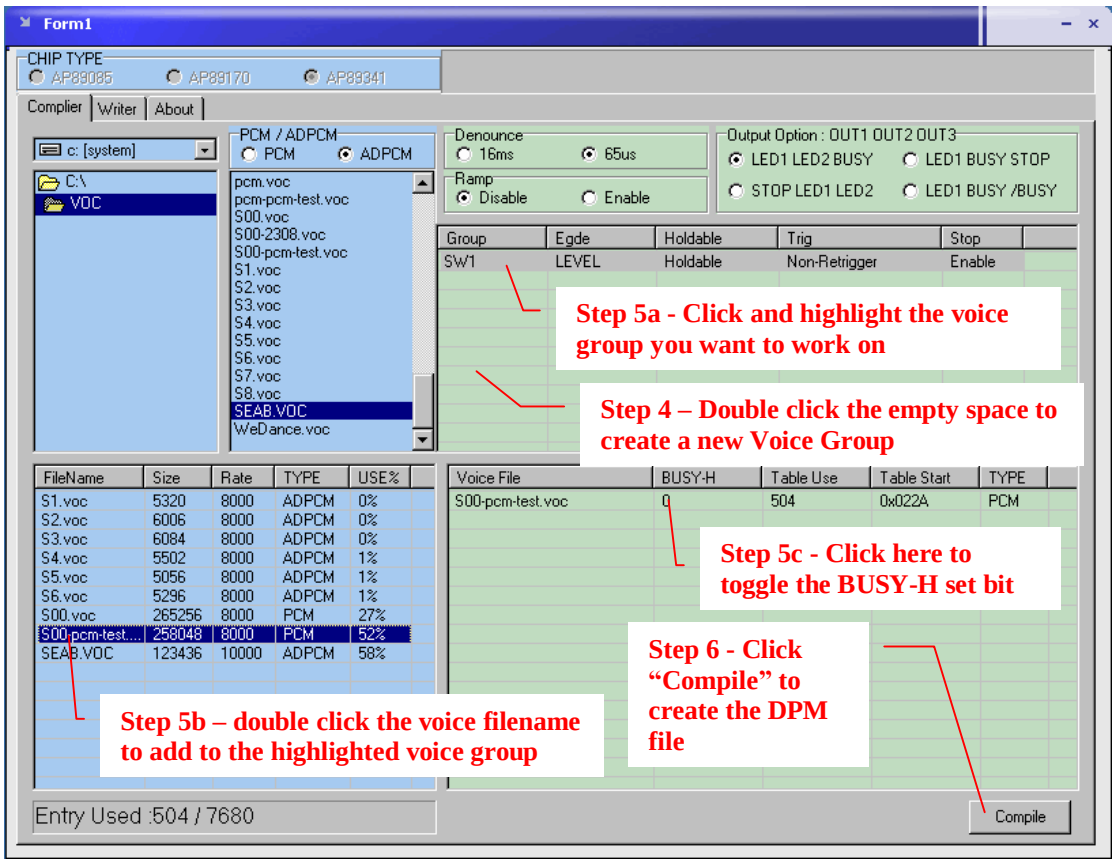
- double click the empty space in the Group Option Selection area, a details list of available options will be displayed
- click on the small dot besides the option name to select the desired option
- click the "OK" button when finished
- click the "Cancel" button to cancel the current selection

Step 5 – Adding Voice Files to form Voice Group

- click to highlight the Voice Group you want to work on
- double click the selected voice file in the Selected File Display area, the voice file will be added into the Table Entry area
- double click on the number bit below the BUSY-H column to set or reset the busy-high output for this particular voice selection in the Group. "1" to set the busy-high output and "0" to reset the busy-high output.
- right click on the voice file allows you to remove the selected voice file
- right click on the Voice Group allows you to playback or remove the group

Step 6 – Generation of the DPM file for Device Programming

Press the "Compile" button to generate the .DPM file for OTP programming. files will be created.



Writing OTP device

After finishing DPM file generation, you can program the OTP device. Click the "Write" tab to enter the OTP programming section. There are the following functions:

- **Load File**: load the DPM file from Hard Disk
  After loading DPM file, the Voice Groups and selected options are displayed. The load function will also detect the checksum stored in the DPM file and compare with the checksum calculated from the DPM file contents. If they are different, the DPM file cannot be loaded.

- **Blank Check**: the OTP device inserted on the writer board will be checked whether it is blank and hence available for programming.

- **Verify**: pressing this button will cause the writer to check the contents inside the OTP device against the loaded DPM file.

- **Write OTP**: the load DPM file will be programmed into the OTP inserted in the writer board