

PDA Simulator User Manual: Voice Interface

1. Overview

Voice interface add to PDA simulator with the functionality of recognizing a small set of voice commands. There are 50 commands available. For every incoming wave file, PDA compares its FFT feature vector sequence (the FFT spectrum) with 200 stock sample FFT spectrums (4 samples per command) and regard the closest one as the result of voice command recognition.

I use the 1-4th sample files in every group of [the speech database](#) as training set and the 5th sample file as tester.

2. Screen layout and functions

The top panel of the screen displays the original waveform of the inputted wave file. Below it, there are two panels display FFT spectrums. The left one shows spectrum of input wave and the right one shows the closest spectrum in stock samples. At the bottom, there is a text that gives the result of command recognized.

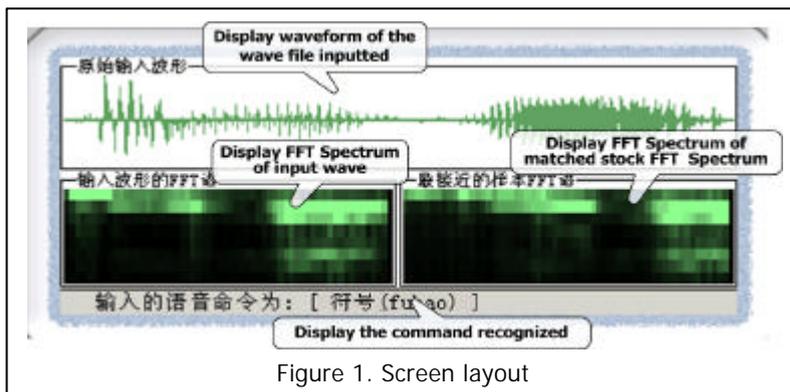


Figure 1. Screen layout

3. Keyboard functions

Any time, you can click  to select a wave file for voice command recognition. It plays the voice and start matching the input FFT spectrum with stock ones at the same. The UI is blocked when matching is in progress. After matching, the result is displayed on the screen then you can click  again to select others wave files or click one of keys in the keyboard to return to the original state.

4. Runtime requirement

This software is partly based on IE (Microsoft Internet Explorer) and use HTML and ActiveX. You need not to manually register the ActiveX SimCore.Dll, it will be automatically registered when KeySim.exe startups. It runs on Win32 platform (includes Win98/Me Win2000/XP) but the following is required or it won't run correctly (at least damage its visual effects):

1. With IE 5.5 or newer version installed. (with IE 5.0 there is a small bug but you may not notice it ^_^)
2. With TureType font “新宋体” (simsun.ttc) installed. (Win2000 ready have it but Win98 don't :-()

When you run this software, you may experience security warnings reported by IE (depend on your own internet security settings and version of IE) like the following. Don't worry, just click “Yes”, it is no hurt to your computer.

