

## VoiceKit2000

### Hardware and Software Instruction Manual

Web Link to this product:  
<http://www.oki.co.jp/semi/english/vk2000.htm>

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## 1. PRODUCT DESCRIPTION

VoiceKit2000, hereafter referred to as VK2000, is a printed circuit board designed for the purpose of demonstrating a selection of OKI Electric's speech LSIs in conjunction with an IBM PC/AT compatible personal computer running Windows 95/98®. The board includes six different speech LSIs to demonstrate, a controller circuit and a battery pack case. Connections are provided for a microphone, two speakers (all 3.5mmØ) and a 9-pin serial interface connector.

#### Delivery includes:

- VoiceKit2000 board, battery case attached
- Control software for Windows 95/98®
- RS232C cable (a male end to VK2000, a female end to the host PC)
- This instruction manual
- Loudspeaker x 1
- Microphone x 1
- Four LR6/1.5V alkaline batteries

#### Board dimensions:

- 120(W) x 130(L)mm

#### Mounted Speech LSIs:

- ML2500 Analog storage recorder LSI with internal 1 megacell flash memory
- MSM9888L ADPCM recorder LSI with external 4 megabit Oki Serial Voice Flash
- MSM9841 ADPCM recorder LSI with FIFO buffer and DMA interface
- MSM66P56 ADPCM/PCM speech synthesis LSI with internal 2 megabit OTPROM
- MSM9831 PCM speech synthesis LSI with internal 384 kilobit ROM
- MSM6722 Voice pitch control LSI, within  $\pm$  one octave control range

## 2. NOTICE

The manufacturer of VK2000 assumes that the user is well familiarised with the use of PCs and the Windows 95/98® operating system. It is of further advantage to be familiar with the essential functions of each speech LSI on the VK2000 board. For details please ask for the latest data sheets or visit our website

product page: <http://www.oki.co.jp/semi/english/vk2000.htm>

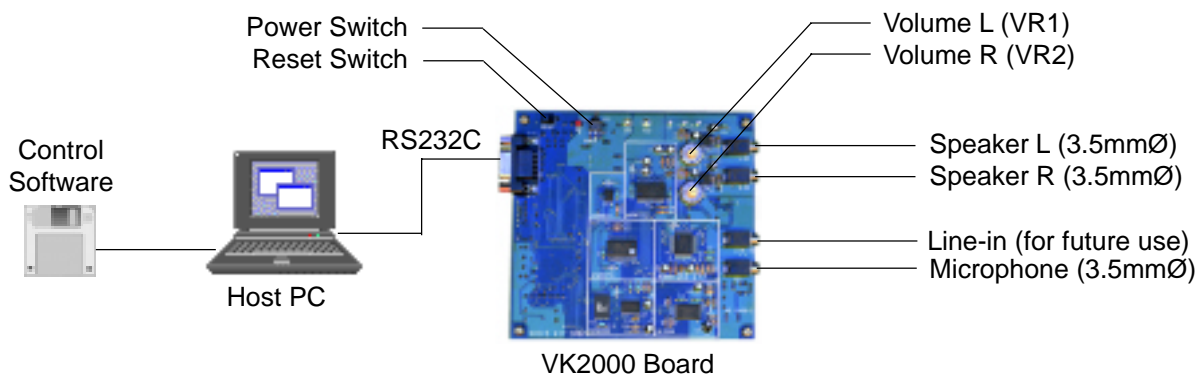
homepage: <http://www.oki.co.jp/semi/>

where you will also find updates of the VK2000 control software and its (this) instruction manual in Adobe's Acrobat® format.

### 3. SYSTEM REQUIREMENT

- IBM PC/AT or 100% compatible
- Windows 95/98® operating system
- Pentium® CPU 133MHz min. (166MHz or above recommended)
- 16 MB working memory (32MB or more recommended)
- 10MB free hard disk space
- VGA monitor 640 x 480 pixels, 256 colours min.
- Mouse

### 4. HARDWARE CONFIGURATION



If you use one speaker make sure to plug it into the LEFT speaker jack. The right speaker output is for MSM9841 mode only.

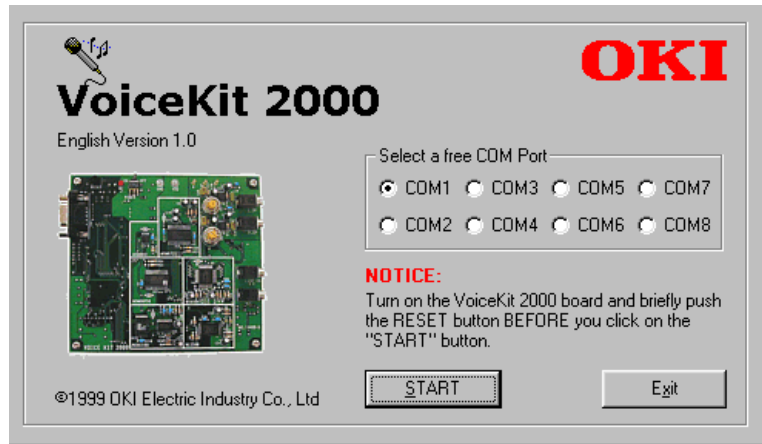
### 5. SOFTWARE INSTALLATION AND REMOVAL

Control software for VK2000 comes on two floppy disks. Insert disk 1/2 and select SETUP.EXE from the Program Manager. Double click and simply follow the instructions of the setup program. The software can be uninstalled using the Windows control panel (Add/Remove Programs).

NOTE: If you need to re-install the software, please first uninstall any previous version using the Windows control panel (Add/Remove Programs).

## 6. GETTING STARTED

Connect VK2000 firmly to a free serial port of the PC. Double-click on the program icon to start the control software which will come up with the screen pictured below for the selection of the serial port.



By default, COM1 is selected. Any valid selection you make will be stored in an initialisation file and be available at next start up. Before going further, please make sure that the serial cable is properly connected to both VK2000 and the host. Then engage power to VK2000 and push the Reset button briefly before you click on the START button.

### NOTICE

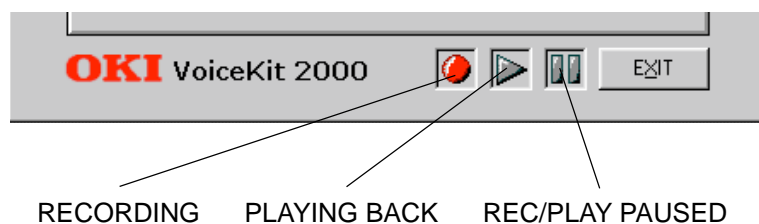
When using a laptop or notebook, noise may interfere from the AC adapter. In such an event please run on the battery.

The recording devices, ML2500, MSM9841 and MSM9888L have no pre-recorded samples associated with them. Please record first before you click on a playback button.

## 7. THE SPEECH LSI PANEL

The LSI panel is the working screen. The control software is so designed as to provide a panel on which each LSI can be selected and activated simply by a mouse click. Please refer to the following pages for more information.

Commonly used by all LSI modes are the optical symbols for REC, PLAY and PAUSE, which come on and go off in accordance with a current selected mode.



Adjust the audio volume using the variable resistors VR1 for the left speaker output and VR2 for the right speaker output.

## 7.1. L2500 (Full part number ML2500)

Analog storage recorder LSI with internal 1 megacell flash memory.

The voice quality of ML2500 is representative for all Oki analog storage recording LSIs.



### Recording

1. Select the number of phrases (recording channels from 1 to 16) into which you would like to split the recording memory. All phrases will have the same length. They are symbolised in the Start Switches frame.
2. Select the desired sampling frequency and click on the RECORD option box.
3. In the Start Switches frame, click on the phrase which you wish to record.

Recording will stop at the boundary of the selected phrase or can be stopped clicking on the STOP button. Likewise, recording can be temporarily suspended with a click on the PAUSE button.

### Playback

1. Click on the Play option box.
2. In the Start Switches frame, click on the phrase which you wish to play back.

Playback will stop at the boundary of the selected phrase or can be stopped clicking on the STOP button. Likewise, playback can be temporarily suspended with a click on the PAUSE button.

## 7.2. M9888L (Full part number MSM9888L)

ADPCM recorder LSI with external 4 megabit Oki Serial Voice Flash.



### Playback from LSI-internal Mask ROM

MSM9888L contains a 512KBit ROM which is programmed with sample sounds. Select a sample from the combo box in the Phrase Address Table frame and click on PLAY. Or click on one of the SAMPLE buttons to listen.

### Recording

If the device is still unrecorded, the combo box labelled “Recording No” shows 01. It will automatically increment as the RECORD button is clicked.

1. Select a recording number, select the desired sampling frequency.
2. Click on RECORD. Click on STOP when finished.
3. The recorded phrase and sampling rate appears in the right combo box labelled “Play or Erase No”.

### Playback

1. Select the desired phrase from the combo box labelled “Play or Erase No”.
2. Click on PLAY

### Erase

1. Select the desired phrase from the combo box labelled “Play or Erase No”.
2. Click on ERASE

### 7.3. M9841 (Full part number MSM9841)

ADPCM recorder LSI with FIFO buffer and DMA interface.



#### Recording

If the device is still unrecorded, the combo box labelled “Phrase No” shows 01. It will automatically increment as the RECORD button is clicked.

1. Select a recording number, select the desired sampling frequency, select the desired algorithm
2. Click on RECORD.
3. Click on STOP when finished.
4. The recorded phrase and algorithm appears in the combo boxes in the PLAY frame above.

#### Playback

1. Select MONO or STEREO
2. Set the volume for each channel separately, if you wish
3. Select a phrase from a combo box
4. Playback commences

#### Erase

1. Select the desired phrase from the combo box in the REC frame
2. Click on ERASE

#### 7.4. M66P56 (Full part number MSM66P56)

ADPCM/PCM speech synthesis LSI with internal 2 megabit OTPROM.



#### Playback

1. Select a Pharse Table
2. Select the desired pharse from the associated combo box.
3. Click on PLAY
4. Click on STOP, if you wish to terminate before playback end automatically.

## 7.5. M9831 (Full part number MSM9831)

PCM speech synthesis LSI with internal 384 kilobit ROM.



### Playback of pre-recorded samples

1. Select the Phrase Table frame
2. Select the desired phrase from the associated combo box.
3. Click on PLAY
4. Click on STOP, if you wish to terminate before playback ends automatically.

### Blinker sounds

1. Click on TYPE A and TYPE B buttons to playback.
2. Click on STOP, if you wish to terminate before playback ends automatically.

### DTMF

1. Click on a number key and the corresponding DTMF tone is output.
2. Every number appears in a text box
3. Press START to output DTMF tones for all numbers in the text box
4. Click on CLEAR to clear the text box.



## 7.6. M6722 (Full part number MSM6722)

Voice Pitch Controller LSI within  $\pm$  one octave control range.



The MSM6722 has no recording and playback function. It shifts your voice coming from the microphone in real-time within an octave up or down.

### Speech Pitch

1. Set the speech pitch as desired and speak into the microphone.
2. You can alter the pitch setting whilst talking in the microphone.

### M9841 Sound

Usage of this requires that speech was previously recorded with the M9841 mode. A recording is passed through the M6722 chip and pitch shifted in accordance to the setting on the piano keys or on the scroll bar above.

1. The M9841 recorded phrases are listed in the combo box.
2. Select the desired phrase.
3. Playback through the pitch controller commences
4. Click on STOP if you wish to terminate

**NOTICE**

The information contained herein can change without notice owing to product and/or technical improvements. Before using the product, please make sure that the information being referred to is up-to-date.

The outline of action and examples for application circuits described herein have been chosen as an explanation for the standard action and performance of the product. When planning to use the product, please ensure that the external conditions are reflected in the actual circuit, assembly, and program designs.

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