

VIC-VODER

Model NX64H



User's Guide

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RICK MELICK**

VIC-VODER TTS SYNTHESIZER FOR COMMODORE

Dear User,

Congratulation on your purchase of the VIC-VODER! Voice synthesizers for legacy systems are getting harder and harder to find these days.

Back in the day, low-end units required manual translation of allophones or phonemes from lookup tables in manuals, combined with PEEKs and POKEs, to form words and sentences. Their price was relatively attractive, and they opened up the world of speech to budding developers at home.

The high-end units were primarily designed as assistive technology and were incredibly expensive. These units processed streams of ASCII characters and automated the conversion to allophones or phonemes for the synthesizer to reproduce as human speech. They were therefore easier to use, but voice quality still left a lot to be desired.

Research into speech technology has continued over the past 30 years, of course, and is much better today. Computers and multi-tasking operating systems are also now fast enough to handle voice reproduction themselves, while simultaneously doing any number of other useful things.

The inspiration for VIC-VODER is to provide modern-day users, enthusiasts, hobbyists and collectors of vintage computer systems an easy means to take full advantage of all the latest advancements in speech technology, while maintaining a form-factor and interface suitable for legacy systems. These classic computers typically run at 1-2MHz and feature proprietary connectors to the outside world, such as Commodore Business Manachines' USER PORT.

Your VIC-VODER was designed in California by Rick Melick. Final assembly also happens in the United States. I hope that you have many years of trouble-free operation, and enjoy using the system as much as I have had bringing it to you. Thank you!

Cheers,
Rick

HISTORY OF VIC-VODER

What is VIC-VODER? The name stands for Vocal Output DEmonstrator and is intended for all computers based on Commodore Business Machines' VIC line-up: VIC-20 (VC-20, VIC-1001); C64 and C128. All of these machines share two common attributes. The CB2 line is exposed on the User Port as pin "M" and their kernals support serial communication via the USER PORT.

The concept for a modern day Voice Synthesizer for legacy computers began on April 29, 2013 after the AtariVox+ began shipping. An early, silicon-based approach was abandoned on May 23, 2013. A second approach began on May 25, 2013 that resulted in a working proof-of-concept device. Based upon that initial success, combined with consumer demand, work on a prototype began on June 4, 2013. VIC-VODER was released for sale on July 4, 2013.

COMPONENTS OF VIC-VODER

VIC-VODER only requires your computer to connect to its USER PORT. Nothing else is needed. Everything is contained within the system itself. ...Except for what you want it to say!

- simple, classic, all-in-one design
- attaches directly to the User Port
- reliable, upgradable and "open" components
- easy to use and maintain

THE LED INDICATOR

The LED on the rear-facing edge of the unit will visually indicate one of three operating modes:

- OFF - When the LED is off the unit is busy and not ready to speak your commands. Don't turn your computer off when the red light is off.
- BLINKING - The LED will blink if an upgrade script is found during the power-on process. Don't turn your computer off when the red light is blinking. VIC-VODER will also speak and tell you that it is performing an upgrade / going to reboot.
- ON - The LED will shine solid when the unit is in its speech synthesizer mode and ready to be used by your program(s). This is the system's "steady state" mode. You may turn your computer off any time the LED is on and shining steadily. (System reset buttons have no affect on VIC-VODER and may be used at any time.)

HOW TO USE VIC-VODER

The use of VIC-VODER is based simply upon Commodore Business Machines' traditional device support. You only need to know three BASIC commands: OPEN, PRINT and CLOSE.

```
OPEN 1, 2, 3, CHR$(10)
```

OPENing a command channel to a device on the USER PORT is what you must do first. In the example above we'll be writing to logical device #2 at 1200 baud.

```
PRINT #1, "HELLO WORLD!"
```

PRINTing to the logical device is the second thing you must do to hear human speech spoken by the voice synthesizer. This process is known as text-to-speech (TTS).

PLAYING SCOTT ADAMS ADVENTURE SERIES ON VIC-20

If you have a MegaCart for the VIC-20, to use the Scott Adams adventures with VIC-VODER, power ON your computer and launch the adventure from the cartridge menu; hold down the F1 key while hitting the reset button on MegaCart; then enter SYS32592.

CHANGING SYSTEM DEFAULTS

The default VIC-VODER communication settings are 2400-8-N-1. To set your computer to talk to VIC-VODER at this speed, type: OPEN 1,2,3,CHR\$(10). Once you have a command channel open, you may send VIC-VODER commands to temporarily change its settings. (Your changes will be lost when you power-cycle your computer.) You don't need to memorize these commands, they are conveniently affixed under the base of your unit for future reference.

- 1200 baud - When you are in 2400 baud mode you may switch to 1200 baud by executing the following commands from BASIC:

```
OPEN 1,2,3,CHR$(10):PRINT#1, "SET TTY LO":CLOSE 1
```

- 2400 baud - When you are in 1200 baud mode you may switch back to 2400 baud in one of two ways.
 - Power-cycle your computer.
 - OR-
 - Execute the following commands from BASIC:

```
OPEN 1,2,3,CHR$(8):PRINT #1, "SET TTY HI":CLOSE 1
```

VIC-VODER HARDWARE SPECIFICATIONS

- External Dimensions: 125mm x 80mm x 32mm (inserted)
- External Connector: CARDEDGE 24POS .156 X .140
 - Serial Connection Settings: 2400-8-N-1
- External User Control: Rotary Volume [ON/OFF]
- Speaker: 1 5/8" round, 8 ohm, 0.1 watt
- Multi-purpose Indicator: LED
- CPU: ARM1176JZFS @ 700Mhz
- Memory: 256MB SDRAM
- Onboard Storage: 4GB Class 10 SDHC
- Power Rating: 515mA

VIC-VODER SOFTWARE SPECIFICATIONS

- Operating System: Linux
- TTS Software: Festival Speech Synthesis System
 - English

SOFTWARE UPDATES

- Your VIC-VODER has been shipped to you with the latest code. The system will announce its version upon startup though the speaker.
 - Example: "VIC-VODER Version 1. System ready."
- You can compare your version against the latest version on the web site. If they differ you can read the release notes and evaluate if you wish to perform an upgrade.
- The "How-To Guide" is documented on the web site.
- The web address is: <http://goo.gl/nx64h>

BASIC TROUBLESHOOTING STEPS

- Be sure the volume switch is turned on and is up to a sufficient level for hearing the startup message.
- Turn on your computer and wait for the startup message to announce. The LED indicator will then light up and stay steady. (my take a few moments)
- If after sixty seconds you do not hear the startup message or see the LED turn on, try to re-image your SD card to the latest version. (See the SOFTWARE UPDATES section above.)
- If you do get a startup message, next try to follow the example in the HOW TO USE VIC-VODER section above. Follow it exactly letter-for-letter.
- Check the VIC-VODER User Group and FAQ. Links for both are on our web site: <http://goo.gl/nx64h>
- If all else fails, you can email tech support at:

rmelick650@gmail.com. Please put "VIC-VODER
SUPPORT" in the subject line, and include the
number printed on your warranty sticker (attached
to the unit).