

## VIC-VODER “LX” NOTES

Thank you for your purchase! The LX version of VIC-VODER is *new* as of August 2013. The purpose of this document is to supplement the information provided on the VIC-VODER web site, <http://goo.gl/nx64h>

**Note:** If you purchased the external SDHC card reader (optional), the SDHC card reader mechanism is spring loaded. When inserting you SD Card, push it all the way in until there is a “click” and then release. Likewise, to remove the SD Card, first push in until there is a “click” and then release. Do not remove the SD Card when your Commodore computer is ON. **Only insert or remove the SD Card when the computer is OFF.**

- Please allow up to 30 seconds for VIC-VODER to “warm up.” The unit will announce, “VIC-VODER Version One. System ready!” The red LED will then illuminate.
- The system reset button near the red LED will reset your Commodore computer, and has no effect on VIC-VODER. (You do not need to wait 30 seconds for VIC-VODER to warm up again after resetting your computer.)
- The power point in the rear of the unit is **+5V DC**. If you have an accessory such as a parallel printer adapter, print buffer, or any other accessory that requires supplemental power from a cassette port adapter or joystick port adapter, you may instead clip to the power point on your VIC-VODER.
- The “line out” jack at the rear of the unit is not amplified. DO NOT connect any speaker or headphones to the “line out” jack directly – without an amplifier. Instead, connect it to the input of your TV, stereo or PA system. The “line out” jack is intended for use in public display of the VIC-VODER unit, such as computer club meetings or computer fairs, or anywhere there is a lot of background noise competing. **Connecting an unamplified speaker or headphone to the “line out” jack directly will damage your Commodore computer.**

### CB2 Sound

CB2 sound mode dates back to the late 1970s and the first Commodore PET computers. These early machines had no sound, but innovative users discovered a way. The pin on the USER PORT used to send data to be spoken by the speech synthesizer is the same pin used to provide the CB2 sound musical voice. A switch has been added on the LX version of VIC-VODER to toggle back and forth between the two modes.

- The CB2 sound toggle switch is located below the volume control knob of your VIC-VODER. When the tip of the switch is pointed *away* from the Commodore computer, the unit is in voice mode. Similarly, if the tip of the switch is pointed *toward* your Commodore, the system is in CB2 sound mode.

- CB2 sound is a little louder than the voice produced by VIC-VODER. For this reason you may wish to reduce the volume on your unit. When using the CB2 sound feature, dial back the volume control knob about 50% from its present position.
- Please refer to the table below to add an extra musical voice to your VIC-20 and Commodore 64 computer programs. In addition, a VIC-20 demo program called, "CB2," has been added to the software download section of the VIC-VODER web site. This program will allow you to play notes, "A B C D E F G," and change octaves using the +/- keys. X to exit.

## CB2 Note Values

Reset Port with POKE (VIC:37147 / C64:56587), 0

VIC 20 : POKE 37147,16 : POKE 37146, (Oct) : POKE 37144, X  
 C64 : POKE 56587,16 : POKE 56586, (Oct) : POKE 56584, X

Note	Oct = 15		Oct = 51		Oct = 85	
	Octave 0	Octave 1	Octave 1	Octave 2	Octave 2	Octave 3
B	251 <sup>b</sup>	125	251	125	251	125
C	238	118	238	118	238	118
C#	224	110	224	110	224	110
D	210	104	210	104	210	104
D#	199	99	199	99	199	99
E	188	93	188	93	188	93
F	177	88	177	88	177	88
F#	168	83	168	83	168	83
G	158	78	158	78	158	78
G#	149	74	149	74	149	74
A	140	69	140	69	140	69
A#	133	65	133	65	133	65

Square Wave Frequency Formulae:      where: Clock = 1,000,000

Frequency Output (F) = Clock / 2 (N + 2) (C)      C = 8 for **Oct = 15**

Number in Table (N) = (Clock / F x C x 2) - 2      C = 4 for **Oct = 51**

C = 2 for **Oct = 85**

- There is a procedure to switch back to voice mode from CB2 sound mode. You could power-cycle your computer completely. Or, for example, on the Commodore VIC-20, you can type:

```
POKE 37147,64:POKE 37146,240:OPEN 1,2,3,CHR$(10):PRINT#1:CLOSE 1
```

(Be sure you have also flipped the toggle switch back to speak mode.)

This procedure will fully reset the USER PORT. VIC-VODER is now ready to speak again.