VOCALIST® VL3D

Vocal Harmony and Effects Processor

DigiTech®

Owner's Manual

The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

ELECTROMAGNETIC COMPATIBILITY

This unit conforms to the Product Specifications noted on the **Declaration of Conformity**. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

Operation of this unit within significant electromagnetic fields should be avoided.

- use only shielded interconnecting cables.

If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

Private household in the 25 member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).

For Countries not mentioned above, please contact your local authorities for a correct method of disposal.

By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

WARNING FOR YOUR PROTECTION PLEASE READ THE FOLLOWING:

KEEP THESE INSTRUCTIONS

HEED ALL WARNINGS

FOLLOW ALL INSTRUCTIONS

THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING LIQUID AND NO OBJECT FILLED WITH LIQUID, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS

CLEAN ONLY WITH A DRY CLOTH.

DO NOT BLOCK ANY OF THE VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

DO NOT INSTALL NEAR ANY HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES, OR OTHER APPARATUS (INCLUDING AMPLIFIERS) THAT PRODUCE HEAT.

ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.

UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.

Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Refer all servicing to to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

MAINS DISCONNECT: The plug shall remain readily operable. For rack-mount or installation where plug is not accessible, an all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated into the electrical installation of the rack or building.

Manufacturer's Name:	DigiTech
Manufacturer's Address:	8760 S. Sandy Parkway Sandy, Utah 84070, USA

declares that the product:

Product name:	VOCALIST VL3D
Product option:	all (requires Class II power adapter that conforms to the requirements of EN60065, EN60742, or equivalent.)

conforms to the following Product Specifications:

Safety:	IEC 60065 (7th ed. 2001)
EMC:	EN 55103 (2001-A1) EN 55020 (1998)

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 2006/95/EC and the EMC Directive 2004/108/EC as amended by Directive 93/68/EEC.

Vice-President of Engineering
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Warranty

We at **DigiTech®** are very proud of our products and back up each one we sell with the following warranty:

1. The warranty registration card must be mailed within ten days after purchase date to validate this warranty.
2. DigiTech warrants this product, when used solely within the U.S., to be free from defects in materials and workmanship under normal use and service.
3. DigiTech liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, provided the product is returned to DigiTech WITH RETURN AUTHORIZATION, where all parts and labor will be covered up to a period of one year. A Return Authorization number may be obtained from DigiTech by telephone. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.
4. Proof-of-purchase is considered to be the burden of the consumer.
5. DigiTech reserves the right to make changes in design, or make additions to, or improvements upon this product without incurring any obligation to install the same on products previously manufactured.
6. The consumer forfeits the benefits of this warranty if the product's main assembly is opened and tampered with by anyone other than a certified DigiTech technician or, if the product is used with AC voltages outside of the range suggested by the manufacturer.
7. The foregoing is in lieu of all other warranties, expressed or implied, and DigiTech neither assumes nor authorizes any person to assume any obligation or liability in connection with the sale of this product. In no event shall DigiTech or its dealers be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond their control.

NOTE: The information contained in this manual is subject to change at any time without notification. Some information contained in this manual may also be inaccurate due to undocumented changes in the product or operating system since this version of the manual was completed. The information contained in this version of the owner's manual supersedes all previous versions.

Overview

Introduction

The Vocalist® Live 3 Desktop (VL3D) is a powerful but easy to use intelligent vocal harmony processor. Armed with the musIQ® harmony generation technology, the VL3D combines studio-quality audio performance, state of the art vocal processing and an easy to use control interface.

The VL3D provides the flexibility to allow musIQ technology to automatically generate two Harmony Voices, to manually produce up to four Harmony Voices in MIDI Notes mode, or to manually define the key and scale for the Harmony Voices in instrument-free Acappella mode. In addition, the VL3D offers Pitch Correction, Gender Shifting, and Humanize functions too.

With 5 available patches to save harmony configurations, four vocal Pre-Effects, pitch correction, three room sizes of reverb and a guitar tuner all packed into a sleek and stylish die cast metal desktop form factor, the VL3D ensures an enjoyable and streamlined harmony and vocal processing experience for a wide range of applications.

musIQ® Technology

musIQ is a revolutionary technology that eliminates the need to program key and scale information to generate Harmony Voices. In real time musIQ technology analyzes the Lead Voice as well as the notes, chords and key signatures played on a guitar or MIDI keyboard and automatically generates accurate and musically correct vocal harmonies that both complement the Lead Voice and fit the music being played. With musIQ technology, you can focus on your singing and playing performance and eliminate song programming once and for all.

VL3D Main Features

- Two voices of fully automatic harmony. Just play naturally on your guitar or keyboard and musIQ® technology will ensure that the harmony voices are always musically correct
- Up to four voices of MIDI controlled harmony. Use your keyboard or MIDI sequence to specify the precise harmony notes you want
- Acappella harmony allows you to specify the key and scale of the song for cases where you are singing without accompaniment
- Gender controls for each harmony voice allow you to alter the character of the harmony voices
- Humanize control to adjust the style of the harmony voices from loose to tight
- Five Harmony Patches to save harmony settings. Each harmony patch has an A part and a B part to make on-stage harmony changes easy
- Vocal Pre Effects: Warmth (tube preamp), Compressor, De Esser and Noise Gate
- Chromatic Pitch Correction
- Reverb with three different room sizes
- MIDI In, Thru and USB MIDI
- Low noise microphone preamp
- 48V phantom power
- Guitar Ground Lift to eliminate any noise hum issues that may arise
- Built-in Guitar Tuner
- Balanced stereo outputs
- Balanced Line In for post processing recording applications
- 24-bit, 44.1kHz audio quality
- Footswitch jack for optional footswitch allowing easy live configuration changes

Included Items

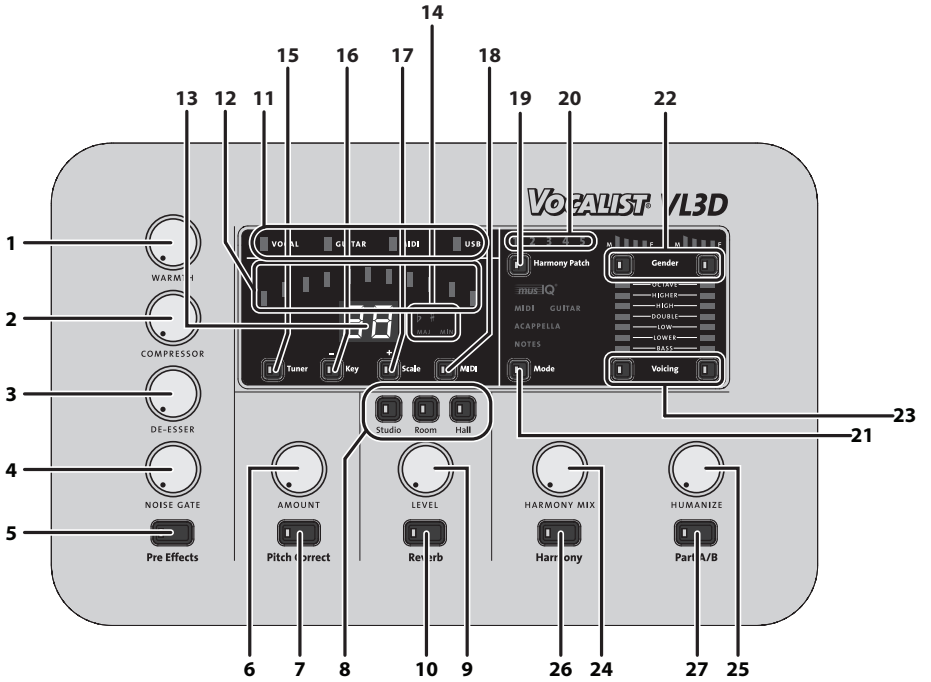
Before you get started, please ensure that the following items have been included:

- The Vocalist® Live 3 Desktop
- PS-0913B Power Adapter
- Owner's Manual
- Warranty Card

The utmost care was taken while your VL3D was being manufactured. Everything should be included and in perfect working order. If anything is missing, contact the factory at once. Please help us become acquainted with you and your needs by completing your warranty card or registering online at www.digitech.com. It is your safeguard should a problem arise with your VL3D.

Important safety tip: Always turn on amplifiers AFTER all other connections are made to the VL3D and AFTER the VL3D is powered up.

Front Panel



1. **Warmth**
   This controls the warmth of the vocal by emulating a tube preamp.

2. **Compressor**
   Adjusts the amount of compression or dynamic range on the lead voice.

3. **De Esser**
   Adjusts the aggressiveness of the sibilance suppression.

4. **Noise Gate**
   Controls the noise gate threshold for the microphone input.

5. **Pre Effects**
   When lit, all Pre Effects are active at their respective dialed in levels. When the button is not lit, all Pre-Effects are turned off.

6. **Pitch Correct Amount**
   Adjusts the amount of the chromatic pitch correction on the lead voice.

7. **Pitch Correct**
   When lit, Pitch Correct is enabled. When the button is not lit, Pitch Correct is disabled.

8. **Reverb Types**

   Studio
   With Studio Reverb lit, a standard studio plate reverb is applied to the vocals.

   Room
   With Room Reverb lit, the modeled natural reverb of a medium sized room is applied to the vocals.

   Hall
   With Hall Reverb lit, the simulated acoustic reverb of a large concert hall is applied to the vocals.

9. **Reverb Level**
   This adjusts the amount of the selected reverb that is applied to the vocals when Reverb is enabled.

10. **Reverb**
    When lit, the selected reverb is enabled. When the button is not lit, Reverb is disabled.

11. **Signal LED Indicators**

    Vocal Signal Strength
    This light represents the signal strength of both the Mic In and Line In. When lit green, the vocal input signal is at a sufficient level. When lit amber, the signal strength is nearing the VL3D limiting point. When lit red, the limiter is active and the Mic/Line Input Level adjustment should be reduced.

    Guitar Signal Strength
    This light indicates the signal strength at the Guitar In. When lit green, a sufficient guitar input signal is present. When lit amber, the signal strength is approaching the limit. When lit red, the guitar signal is clipping and the VL3D Guitar Sensitivity setting should be changed to Lo.

    Note: If the Guitar Signal Strength LED is not lit when playing your guitar, change the VL3D Guitar Sensitivity setting to Hi.

    MIDI
    This light flashes green when MIDI activity is detected on either the MIDI In or USB MIDI ports.

    USB
    This is lit blue when the USB port is connected to a computer.

12. **Tuner Bars**
    These are used by the Guitar Tuner to signify the flat or sharp deviation of the note played from the target note.

13. **Display**
    This display shows the Guitar Sensitivity, Guitar Tuner target note, selected Key in Acappella mode and is used for the MIDI Configuration Menu.

14. **Musical Indicators**

    ♭ #
    In Acappella and Tuner modes, this indicates the selected Key/Note shown on the Display as being Sharp or Flat.

    Maj Min
    In Acappella mode, this defines the selected Scale as Major or Minor.

15. **Tuner**
    Pressing this button will both enter and exit the Guitar Tuner.

16. **Key –**
    In Acappella mode, this button is used to cycle through the available Key selections. In the MIDI Configuration Menu, this button is used to cycle back through the parameter options.

17. **Scale +**
    In Acappella mode, this button is used to toggle the Scale between Major and Minor. In the MIDI Configuration Menu, this button is used to increment through the parameter options.

18. **MIDI**
    Pressing this button enters the MIDI Configuration Menu and cycles through the five configurable options. The button lights to indicate the MIDI Configuration Menu is in use. This menu is automatically exited after cycling past the last item. To exit the menu earlier, hold the MIDI button until the LED turns off.

19. **Harmony Patch**
    This button cycles through the five Harmony Patches on the currently selected bank defined by the A/B button color. To save altered harmony settings to the current Harmony Patch and the current A/B part, hold the Harmony Patch button until the selected Patch Number flashes.
    Note: You must save each A/B part individually.

20. **Harmony Patch Number**
    This indicates which of the five Harmony Patches is presently selected. Note that each Harmony Patch has two harmony settings defined by the A/B button and color.

21. **Mode**
Pressing the Mode button cycles through the four Harmony Modes; musIQ® MIDI, musIQ Guitar, Acappella and Notes.

22. **Gender**
There are individual Gender controls for each of the two Harmony Voices. By pressing the Gender button of the corresponding Harmony Voice, you can cycle through the Gender shifts from Male (M) to Female (F) as indicated on the Gender Display above. Note that when there are no bars lit on the Gender Display, the Gender setting is disabled for the corresponding Harmony Voice.

23. **Voicing**
There are individual Voicing controls for each of the two Harmony Voices. By pressing the Voicing button of the corresponding Harmony Voice, you can cycle through the Voicing options as indicated on the Voicing Display above. Note that when there are no bars lit on the Voicing Display, the Voicing shift is disabled for the corresponding Harmony Voice.

Note: The exact note choice of the various Voicing shift settings depends on the Harmony Mode selected and related variables such as current note or chord, chord history and lead voice note.

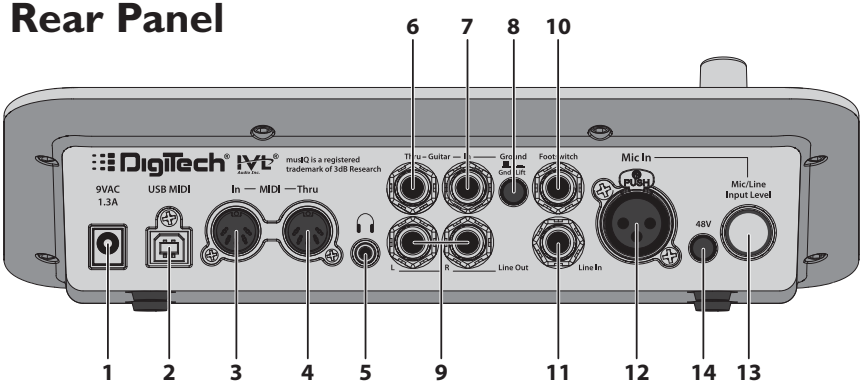
24. **Harmony Mix**
This adjusts the mix of Lead Voice with the Harmony Voices at the outputs. With the knob fully counter-clockwise, only the Lead Voice is present at the outputs with no Harmony Voices. With the knob fully clockwise, only the Harmony Voices will be heard at the outputs with no Lead Voice.

25. **Humanize**
This adjusts the amount of naturalness of the Harmony Voices. The intent is to make the harmonies sound more like real backup singers by introducing variations in the timing and pitch. Fully counterclockwise makes the harmonies follow the lead very tightly. Fully clockwise and the harmonies are quite loose.

26. **Harmony On / Off**
This button turns the Harmony Voices on and off. When the button is lit, the Harmony Voices are enabled. When the light is off, the Harmony Voices are disabled.

27. **Part A / B**
This button toggles between the A and B Parts of the selected Harmony Preset. Green indicates Part A, red indicates Part B.

Rear Panel



1. **Power Input**
   Connect only the supplied PS-0913AC adapter here to power the VL3D.

2. **USB MIDI**
   This USB MIDI computer interface accepts MIDI Notes, Continuous Control, and Program Change messages for harmony generation and control. It is also used for firmware updates.

3. **MIDI In**
   The MIDI In accepts MIDI Notes, Continuous Control, and Program Change messages for harmony generation and control. When the VL3D's USB port is connected to a computer, any data received at the MIDI In jack is passed up via USB to your computer recording/sequencer application.

4. **MIDI Thru**
   The MIDI Thru jack works in two different ways:

   a. When the USB port is not connected to a computer, this jack passes on all MIDI data received at MIDI In jack.

   b. When the USB port is connected to a computer, all MIDI data received via USB from the computer is passed through this jack.

   Note: When USB is connected, the VL3D's MIDI In does not pass data to the MIDI Thru jack

5. **Headphone Output**
   The stereo main mix is supplied to this 1/8" TRS Headphone Output.

6. **Guitar Thru**
   The guitar signal received on the Guitar In is passed through the ¼" unbalanced Guitar Thru to connect to the guitar effects or amplifier.

7. **Guitar In**
   This ¼" unbalanced Guitar In connects directly to the guitar for use by musIQ® Guitar Mode harmony generation.

   Note: It is important for the VL3D to be the first device in the guitar signal chain to ensure proper analysis of the guitar signal for harmony generation.

8. **Ground Lift Switch**
   This switch lifts the Guitar In and Guitar Thru ground references to eliminate any noise hum issues that may arise from system ground loops.

9. **Line Out (L & R)**
   These ¼" balanced TRS / unbalanced TS Line outputs provide a stereo mix of Lead Vocal and Harmony Voices. Use only the Left Line output when a mono mix is needed.

10. **Footswitch**
    This ¼" TRS input is for an optional three-button footswitch such as the DigiTech FS3X or FS300.

11. **Line In**
    This ¼" balanced TRS / unbalanced TS input accepts a line level signal supplying the Lead Vocal. **Note:** When the Line In input is connected, do not connect anything to the Mic In input.

12. **Mic In**
    This balanced XLR input accepts microphone level signals. **Note:** When the Mic In input is connected, do not connect anything to the Line In input.

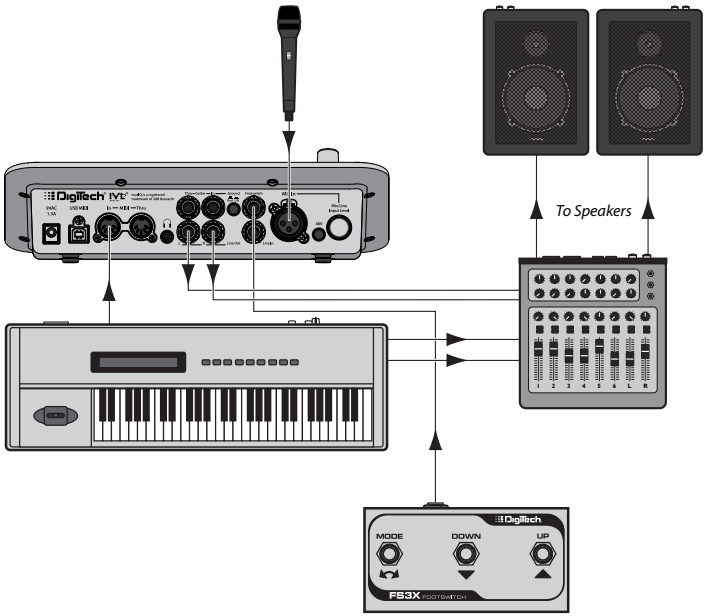
13. **Mic / Line Input Level**
    This adjusts the input level of the Lead Vocal signal from both the Mic In and Line In. The relative signal strength can be determined at the Vocal signal strength indicator on the front panel.

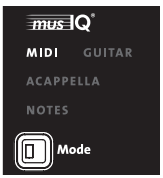
14. **48V**
    Pressing this switch to the inward position turns on the 48V phantom power to the Mic In. With the switch in the outward position, the 48V phantom power is turned off.

    Note: Phantom power is normally only needed with condenser microphones and should never be used with ribbon microphones. To avoid damaging the microphone, please consult your microphone documentation to ensure phantom power is applied only when appropriate.

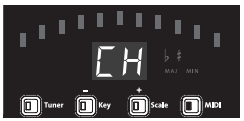
Using the VL3D with a Keyboard

The VL3D can provide fully automatic harmony if you are using a keyboard. Simply connect the MIDI output of your keyboard to the MIDI In of the VL3D. The VL3D monitors what you are playing on the keyboard and adjusts the harmonies to fit over the accompaniment. For best results, make sure your keyboard is tuned to concert pitch (A=440).

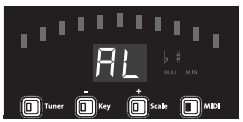




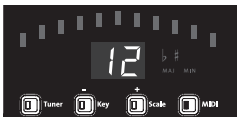
You will need to select the musIQ® MIDI mode using the Mode button. By default, the VL3D listens to all MIDI channels. If desired you can set the VL3D to listen to a particular MIDI channel. To do that, first enter the MIDI Configuration Menu by pressing the MIDI button.



The MIDI button will light and the letters CH will appear on the display momentarily. This indicates that the MIDI channel is set to be adjusted. The CH will soon be replaced by the currently selected MIDI channel.



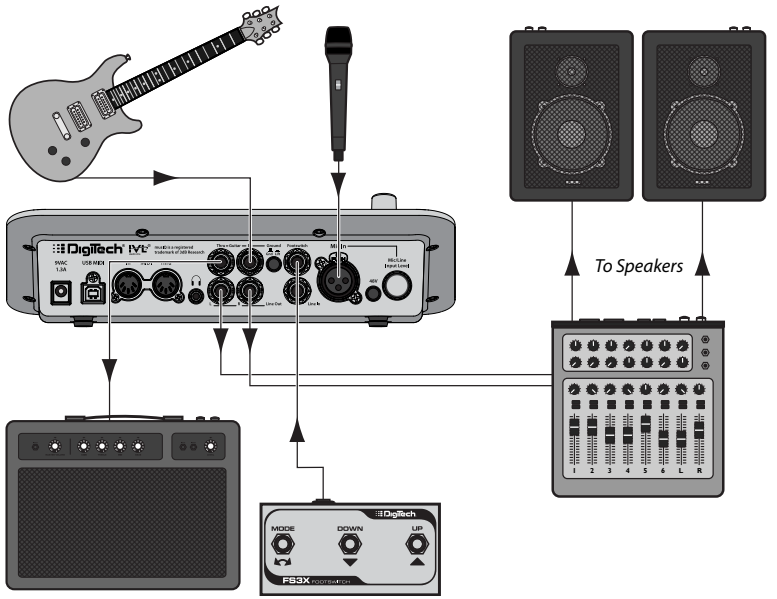
Use the Key + and Scale – buttons to select the desired MIDI channel. The choices are AL (all) and 1 to 16.

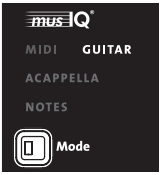


Press and hold the MIDI button exit MIDI setup mode.

Using the VL3D with a Guitar

The VL3D can provide fully automatic harmony for a guitar player. Simply route your guitar signal through the VL3D using the Guitar In and Guitar Thru jacks. The VL3D monitors what you are playing on the guitar and adjusts the harmonies to fit over the accompaniment.



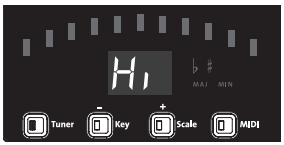


You will need to select the musIQ® Guitar mode using the Mode button.

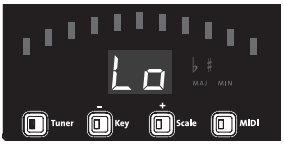
The VL3D must be first in the guitar signal chain to ensure proper musIQ analysis and harmony generation. Connect the guitar directly to the Guitar In. The Guitar Thru output can then be connected to any effects pedals before the amp.

Guitar Sensitivity

While playing the guitar, the Guitar Signal Strength indicator should be green or amber. If the Guitar Signal Strength indicator does not light when you play, the guitar signal level may be too low and the Guitar Sensitivity should be changed to Hi. If the Guitar Signal Strength indicator lights red, then the Guitar Sensitivity should be changed to Lo.

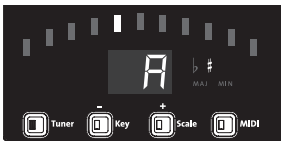


To set the Guitar Sensitivity hold the Tuner button until the new Guitar Sensitivity setting of Hi or Lo is displayed. The most common setting is Lo Guitar Sensitivity.



Tuner

It is important for your guitar to be properly tuned in order for the musIQ® technology to generate the best sounding harmonies. Alternate tunings (for example, DADGAD or tuning down) are fine, as long as the built-in tuner shows each string as in tune. If you are using an external tuner, make sure that the reference is set to 440 Hz.



To use the built-in tuner, press the Tuner button to start the Guitar Tuner. The Tuner button will flash while the Tuner mode is active. Note that for the Tuner to work properly it needs to receive adequate guitar signal strength, which is indicated by the Guitar Signal Strength indicator.

As each string is individually played, the closest note to that played will appear on the Display and the Tuner Bars will show the deviation in pitch from the target note. If the string is in tune with the target note, the green center Tuner Bar will be lit. Bars to the left will light if the string is flat and bars to the right if the string is sharp.

When all strings are in tune, press the Tuner button to exit the Guitar Tuner.

Using the VL3D with a Computer

There are two options when using the VL3D with a computer:

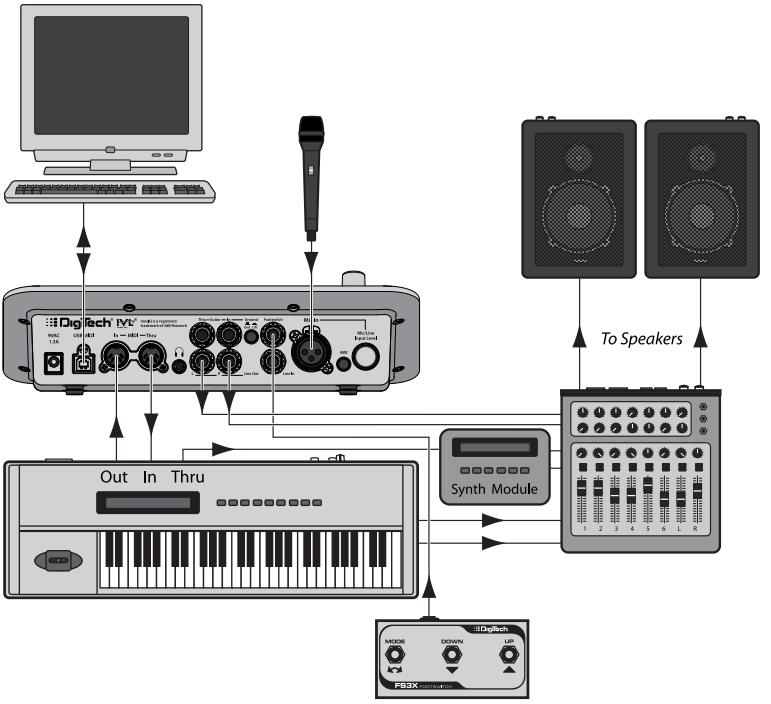
1. The VL3D can be connected directly to a computer via its USB port and used as a MIDI interface.

2. The VL3D can be connected to a a separate MIDI interface already connected to a computer.

VL3D used as a MIDI Interface

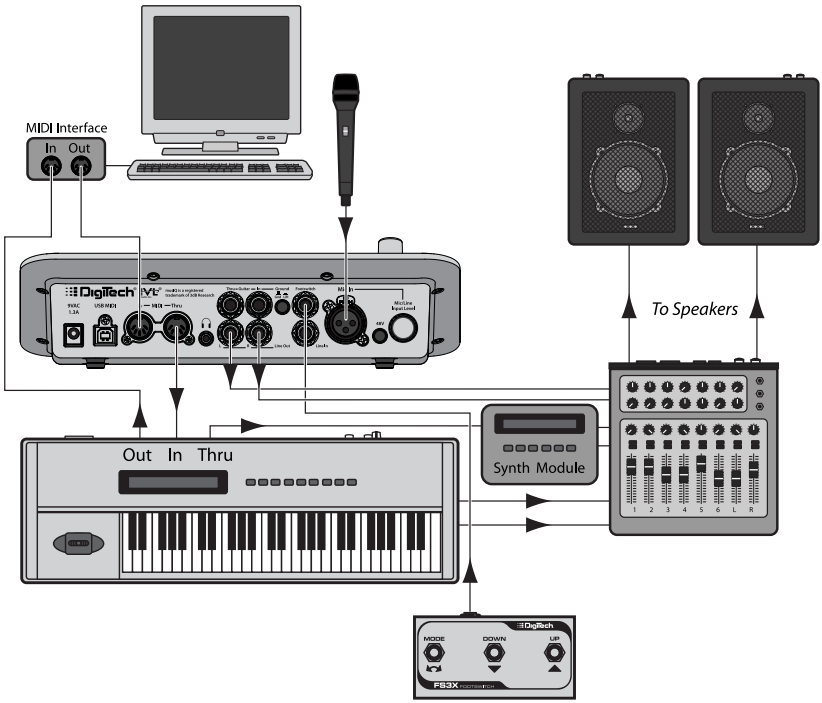
When the VL3D is connected directly to the computer via USB, it acts as a MIDI interface. Data sent into the MIDI In of the VL3D is passed on to the computer through the USB port. Similarly, all data sent from the computer to the VL3D is passed through the VL3D and appears at the MIDI Thru jack.

Note: When USB is connected, the VL3D's MIDI In does not pass data to the MIDI Thru Jack



VL3D connected to a MIDI Interface

When the VL3D is not connected to a computer using the USB port, all MIDI data sent to the MIDI In of the VL3D is passed on to the MIDI Thru jack. This allows you to chain other MIDI devices, such as sound modules, to the VL3D.



Pre-Effects

The VL3D contains a variety of Pre-Effects to enhance your vocal sound.

Warmth

This controls the amount of warm subtle distortion from the tube preamp amp model, adding a degree of vintage tone.

Compressor

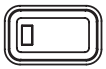
The Compressor gives the ability to tighten up the dynamic range of the Lead Voice. The Compressor threshold, ratio, attack and release are all adjusted automatically to provide the right amount of overall compression.

De Esser

This adjusts the aggressiveness of the De Esser suppression of sibilant sounds that may be over-emphasized by the microphone.

Noise Gate

This control defines the Noise Gate threshold for the microphone input. Below the defined threshold, low level unwanted background noise is muted and will not pass through to the main outputs.



To collectively enable and disable all Pre Effects, press the Pre Effects button. When lit, all Pre Effects are enabled.

Pitch Correct

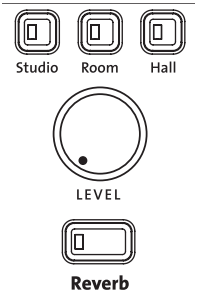
This corrects the Lead Voice to a 12-note chromatic scale.

Use the Amount knob to set the aggressiveness of the pitch correction.

When the Pitch Correct button is lit red, Pitch Correct is enabled. When the button is not lit, Pitch Correct is disabled.

Reverb

There are three selectable room sizes for the Reverb effect. The active reverb type is indicated by the lit button.

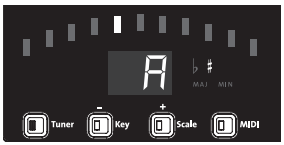


Studio Reverb simulates a studio plate reverb. Room Reverb simulates the natural reverb of a medium sized room. Hall Reverb simulates the reverb of a large concert hall.

The Reverb Level knob adjusts the amount of overall reverb applied to the mix.

When the Reverb button is lit, the Reverb is enabled. When the button is not lit, Reverb is disabled.

Harmony Patches and Parts



Singers need a way to configure different Harmony Voicings for use in different songs. To accommodate this, the VL3D provides Harmony Patches. This allows the singer to specify the Harmony Mode, Voicing, and Gender Settings in advance and recall them when needed during a performance. There are five harmony patches. Each harmony patch also has an A Part and a B Part. Typically this will be used to specify one harmony setting for, say, the verse and a separate setting for the chorus. During the song it is easy to toggle back and forth between the A Part and the B Part with the simple press of a button either on the front panel or on the optional footswitch.

Each Harmony Patch stores the Harmony Mode, Harmony Voicing and Harmony Gender settings. Harmony Patches do not store the Pre Effects, Pitch Correct, Reverb, Harmony Mix, Humanize or Harmony On/Off parameters.

Store and Recall a Patch

To recall a patch, simply select it using the Harmony Patch button to cycle through the saved Patches of stored Harmony settings.

Once you have made changes to a harmony patch, you can store the changes to the selected Patch by pressing and holding the Harmony Patch button until the lit Harmony Patch Number flashes twice.

Note: You must make changes to the Patch location you wish to save them to as there is no way to save changes made in Patch 1 to Patch 5.

Harmony A/B Parts

Each patch contains two independent harmony settings: Part A and Part B. You can select between these two Parts using the A/B button on the face of the VL3D or with an optional 3-button Footswitch. The active Part is indicated by the bi-color LED on the Part button. Green indicates Part A. Red indicates Part B.

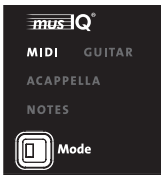
Note: You must store each part individually. For example, if you store Part A to a harmony patch, Part B will not be saved unless you select it and store it also.

Harmony Modes

The Harmony Mode determines how the Harmonies will be controlled for the current Harmony Patch. Pressing the Mode button cycles through the four Harmony Modes.

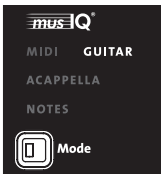
musIQ® Harmony Mode

This mode uses musIQ® technology to automatically generate the harmonies based on the music being played on either a MIDI keyboard or a guitar. Just play naturally and musIQ technology will analyze the music and make sure that the harmonies are musically correct in the context of the accompaniment. The harmony is chosen based on the Voicing selected.



musIQ MIDI

This mode uses musIQ technology to automatically generate the harmonies based on the MIDI input.



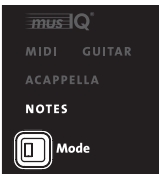
musIQ Guitar

This mode uses musIQ technology to automatically generate the harmonies based on the guitar input.

Acappella Harmony Mode

Acappella mode is intended for vocalists not using a guitar or MIDI keyboard as a guide instrument. In Acappella mode, you must use the Key and Scale buttons to set the desired Key and Scale for the Harmony Voices. Use the Key button to cycle through the available key or root note selections. Use the Scale button to toggle the selections and define the scale as Major or Minor.

Notes Harmony Mode

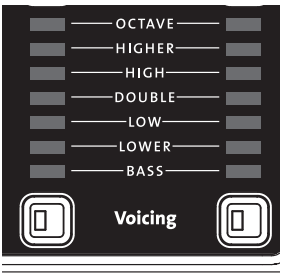


In MIDI Notes mode the VL3D will "sing" up to four notes being played on the MIDI keyboard. For example if you play an E, G, C, and E notes, then four harmonies will be generated at those notes.

In MIDI Notes mode, Harmony Gender controls apply to the first two of four Harmony Voices. Gender control of the remaining Harmony Voices three and four can be achieved by using MIDI CC messages for these Harmony Voices. Since in MIDI Notes mode the Harmonies are controlled directly by the keyboard or sequencer, there is no need to specify a harmony voicing.

Normally, all four harmony voices are controlled using a single MIDI channel. There is another more powerful mode which is most often used when sequencing the harmony parts. This is 4-channel MIDI mode. In this mode each harmony voice is controlled from a separate MIDI channel. This allows one to specify a separate Gender setting for each harmony voice (see MIDI CC Messages section later in this document). This mode provides complete control of the harmonies.

Harmony Voicing



These set the Voicing for the two Harmony Voices in musIQ® and Acappella harmony modes. Each Voicing button sets the Voicing for one of the Harmony Voices by cycling through the Voicing options.

The Double option sets the Harmony Voice to "sing" the same note as the lead voice. This provides a rich doubling sound. By cycling through the options until none of the options are lit, the corresponding Harmony Voice is turned off completely.

Because musIQ technology adjusts the harmony voices depending on the singers note and the music being played on the guitar or keyboard, it is not possible to exactly specify the exact musical interval using the harmony voicing controls. However, it may be convenient to think of the High and Higher settings to be roughly a third and a fifth above the sung note. Similarly, the Low and Lower settings can be thought of as being roughly a third and a fifth below the sung note. The Bass setting is a full octave below.

Harmony Gender

The VL3D has the option of gender shifting the Harmony Voices to change the character of the virtual harmonizing backup singers.

There are individual Gender controls for each of the two Harmony Voices. By pressing the Gender button of the corresponding Harmony Voice, you can cycle through the Gender shifts from Male (M) to Female (F) as indicated on the Gender Display above.

The five Gender options for each Harmony Voice are Heavy Male Gender, Light Male Gender, Light Female Gender, Heavy Female Gender and None. When none of the Gender options are lit, this represents no Gender shift is applied, leaving the corresponding Harmony Voice with the same Gender as the Lead Voice.

Harmony Mix

This adjusts the mix of Lead Voice with the Harmony Voices at the outputs. With the knob fully counter clockwise, only the Lead Voice is present at the outputs with no Harmony Voices. With the knob fully clockwise, only the Harmony Voices will be heard at the outputs with no Lead Voice.

Humanize

Humanize controls a handful of parameters that affect the perceived naturalness of the Harmony Voices. The parameters affect Harmony Voice aspects such as the time delay between onsets of the Harmony Voices, steadiness of the pitch and the pitch scoop of the voices as they shift from one note to the next.

Harmony On/Off

This button turns the collective Harmony Voices on and off. When the button is lit, the Harmony Voices are enabled. When the light is off, the Harmony Voices are disabled.

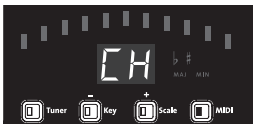
MIDI Configuration

The parameters in the MIDI Configuration Menu are globally shared across all Harmony Patches.

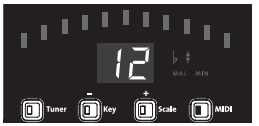
Enter the MIDI Configuration Menu by pressing the MIDI button. The MIDI button will light, signifying the menu is active. The menu options will appear on the Display. Press MIDI again to cycle to the next of five MIDI Menu parameters. Use the Key and Scale buttons to cycle through the available options for each of the MIDI Menu parameters.

Exiting the MIDI Configuration Menu can be achieved in two ways. Press and hold the MIDI button until the LED turns off or simply cycle past the last of the five menu parameters.

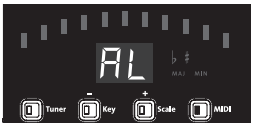
MIDI Channel



The first parameter in the MIDI Configuration menu is MIDI Channel, denoted on the Display by CH.



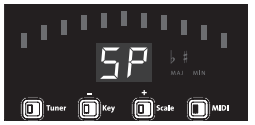
After a second the Display will show the currently selected MIDI channel number. The MIDI channel can be changed to 1 through 16 or set to AL.



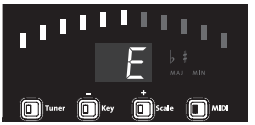
If AL is selected, the VL3D will respond to MIDI input from all 16 MIDI channels.

Split Point

The VL3D can be configured to respond to MIDI notes in a particular active zone of the keyboard, while ignoring received MIDI notes from the inactive zone. After a second the SP on the display will be replaced with the currently selected Split Point.



To define a new Split Point, you must play two notes on your keyboard. The first note played defines the Split Point note that separates the active zone from the inactive zone. The second note played defines the inactive region as above or below the specified Split Point.

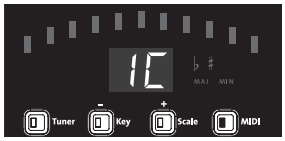


The display shows the Split Point note and octave. The Tuner Bars provide a visual indication of the Split Point and zones. Each of the Tuner Bars represents an octave with the green center being middle C.

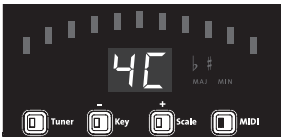
In the figure above, the Split Point is E in the octave starting at Middle C and the VL3D is processing all MIDI notes in the active zone below the Split Point. To clear the current split point simply press the + or – key.

1-Channel and 4-Channel MIDI Mode

This parameter provides two options for controlling the harmony voices in MIDI Notes Harmony Mode. All four Harmony Voices can be controlled from the same MIDI channel (1-Channel MIDI Mode) or from four separate (4-Channel MIDI Mode). By using a separate MIDI channel for each voice it is possible to specify a different gender for each voice and precisely control the notes that voice "sings".



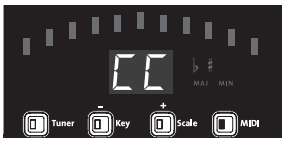
On the Display, 1C signifies 1-Channel MIDI Mode, while 4C represents 4-Channel MIDI Mode.



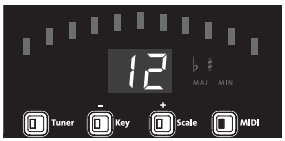
In 4-Channel MIDI Mode, the four sequential MIDI channels are used starting with the MIDI Configuration Menu MIDI Channel as the starting point. For example, if the MIDI Channel is defined as 12, then the 4 Harmony Voices are individually controlled by MIDI channels 12, 13, 14, and 15. If the MIDI Channel is defined as AL, then channels 1, 2, 3, 4 will be used.

CC MIDI Channel

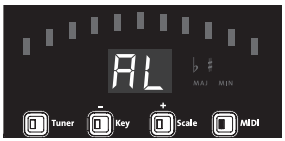
The VL3D can be configured to look for MIDI Control Change messages on a different MIDI channel than is used for MIDI notes. These Control Change message include program change messages and continuous control messages as detailed in the MIDI Messages section on page 23.



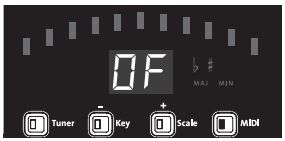
After one second, CC on the Display will be replaced by the current selected CC MIDI Channel.



The Control Change MIDI Channel can be changed to 1 through 16 or AL.



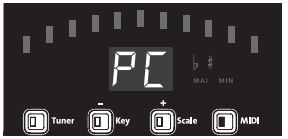
If AL is selected, the VL3D will respond to Control Change messages from all 16 MIDI channels.



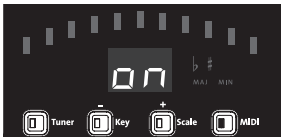
If no MIDI Control Change is desired, select the Channel to Off (OF).

Program Change

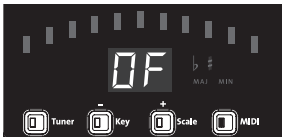
The VL3D can be configured to accept received Program Change messages, or this capability can be turned off. The VL3D looks for Program Change messages on the Control Change MIDI channel as specified in the previous section.



After one second, PC on the Display will be replaced by the current status of Program Change.



on indicates the VL3D will accept PC messages, provided the MIDI CC MIDI channel is not set to OF.



OF indicates that no received PC messages will be processed.

Saving Global Parameters

The following Global Parameters are automatically saved when changed:

- Guitar Sensitivity
- MIDI Channel
- MIDI Split Point
- MIDI Notes Mode Configuration (1-Channel or 4-Channel)
- MIDI CC Channel
- MIDI Program Change Enable

External Footswitch

The VL3D supports the use of an optional external ¼" TRS three-button footswitch such as the DigiTech FS3X or FS300.

The buttons of the External Footswitch perform the following fixed functions:

Left footswitch:	Toggle Harmony Bank A/B
Middle footswitch:	Advance Harmony Patch
Right footswitch:	Harmony On/Off

The VL3D also will support a single button footswitch provided it is a normally open switch. In this case the switch will control Harmony On/Off.

MIDI Messages

Notes

Standard note on and note off MIDI messages are supported for use with the musIQ® MIDI and MIDI Notes Harmony Modes.

Program Change

The VL3D supports 10 PC messages to provide access to all 10 Harmony Patch and A/B Part locations. These messages are received on the MIDI Channel specified by CC MIDI channel.

PC Number	Patch	Part
1	1	A
2	1	B
3	2	A
4	2	B
5	3	A
6	3	B
7	4	A
8	4	B
9	5	A
10	5	B

System Exclusive

Since all parameters are controllable by MIDI CC the VL3D does not support parameter edits via SysEx.

Factory Reset

In order to restore the presets and settings to their factory defaults follow these steps.

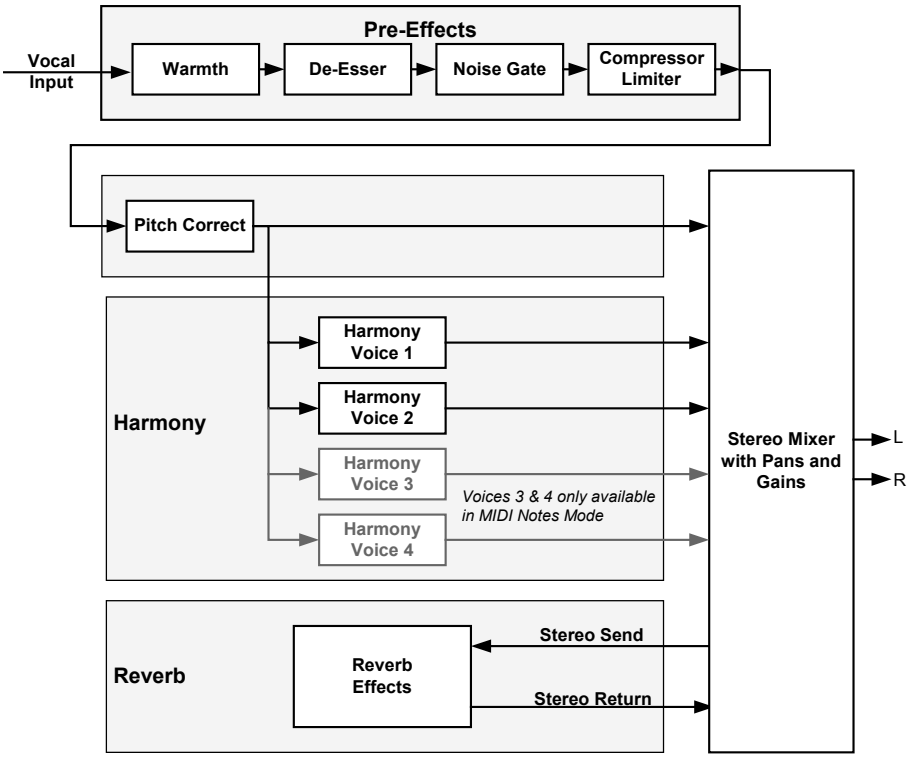
1. Make sure the VL3D is powered off.
2. Press and hold the Key (-) and Scale (+) buttons.
3. While continuing to hold the Key (-) and Scale (+) buttons, power up the VL3D.
4. The VL3D will go through the factory initialization process. During this process it will turn on successively more LEDs. When complete, all the green, yellow and red LEDs in the tuning display will be lit.
5. When all the tuning display LEDs are lit, release the Key (-) and Scale (+) buttons and power down the unit. The Factory Reset procedure is complete.

Continuous Controller

Below is a listing of the CC messages supported by the VL3D. These messages are received on the MIDI channel specified by CC MIDI Channel.

Parameter	CC	Range, Comments
Modulation	1	0 – 127, Controls Vibrato Intensity
Sustain Pedal	64	0 - 63 = Off, 64 - 127 = On
Pre-Effects On/Off	85	0 - 63 = Off, 64 - 127 = On
Pitch Correct On/Off	86	0 - 63 = Off, 64 - 127 = On
Reverb On/Off	87	0 - 63 = Off, 64 - 127 = On
Harmony On/Off	88	0 - 63 = Off, 64 - 127 = On
Warmth	102	0-127
Compressor	103	0-127
De Esser	104	0-127
Noise Gate	105	0-127
Pitch Correct Amount	106	0-127
Reverb Type	107	0-Studio, 1-Room, 2-Hall
Reverb Level	108	0-127
Harmony Mix	109	0-127
Humanize	110	0-127
Voice 1 Voicing	111	0=Off, 1=Bass, 2=Lower, 3=Low, 4=Double, 5=High, 6=Higher, 7=Octave
Voice 2 Voicing	112	0=Off, 1=Bass, 2=Lower, 3=Low, 4=Double, 5=High, 6=Higher, 7=Octave
Voice 1 Gender	113	0 = None, 1=Strong Male Gender, 2=Light Male Gender, 3=Light Female Gender, 4=Strong Female Gender
Voice 2 Gender	114	0 = None, 1=Strong Male Gender, 2=Light Male Gender, 3=Light Female Gender, 4=Strong Female Gender
Voice 3 Gender MIDI Notes Mode Only	115	0 = None,1=Strong Male Gender, 2=Light Male Gender, 3=Light Female Gender, 4=Strong Female Gender
Voice 4 Gender MIDI Notes Mode Only	116	0 = None1=Strong Male Gender, 2=Light Male Gender, 3=Light Female Gender, 4=Strong Female Gender
Harmony Mode	117	0=musIQ® Midi, 1=musIQ Guitar, 2=Acappella, 3=Notes
Acappella Key (Tonic)	118	0=C, 1=C#, 2=D, 3=D#, 4=E, 5=F, 6=F#, 7=G, 8=G#, 9=A, 10=A#, 11=B
Acappella Scale	119	0=Major, 1=Minor

Effects Block Diagram



Specifications

Mic Preamp:

Connector:	XLR balanced
Phantom Power;	+48 V
Input Sensitivity @ 0dBFS:	-22 dBu to +18 dBu
Equivalent Input Noise (EIN):	-127 dBu, 20 Hz - 20 kHz (A-Weighted)
Input Impedance:	6 kΩ Balanced

Line Inputs:

Connector:	¼" TRS balanced / unbalanced
Input Sensitivity @ 0dBFS:	-10 dBu to +30 dBu
Input Impedance:	26 kΩ Balanced, 13 kΩ Unbalanced

Guitar Input / Guitar Thru:

Connectors:	¼" unbalanced
Impedance:	>2.2 MΩ

Line Outputs:

Connectors:	¼" TRS impedance balanced / unbalanced
Output Level @ 0dBFS:	+14.5 dBu
Output Impedance:	2.2 kΩ balanced / 1.1 kΩ unbalanced

Headphone Output:

Connector:	1/8" (tip = left, ring = right, sleeve = ground)
Impedance:	100 Ω per channel

Input (Line) to Output (Line) Performance:

Dynamic Range:	>107 dB, 20 Hz - 20 kHz (A-Weighted)
THD + Noise @ Min Gain:	0.004% @ 1 kHz
Frequency Response @ Max Gain:	-3 dB @ 30 Hz and 21 kHz

Analog to Digital / Digital to Analog Converters

Resolution:	24 bits
Sampling Rate:	44.1 kHz

Digital Connections:

MIDI In:	5-pin Din
MIDI Thru:	5-pin Din
USB:	USB 1.1 (USB 2.0 compatible)

Power

US and Canada:	120 VAC, 60 Hz Adapter: PS0913B - 120
Japan:	100 VAC, 50/60 Hz Adapter: PS0913B - 100
Europe:	230 VAC, 50 Hz Adapter: PS0913B - 230
UK:	240 VAC, 50 Hz Adapter: PS0913B - 240
Australia:	240 VAC, 50 Hz Adapter: PS0913B - 240-AU
Power Input:	9 VAC 1.3 A
Power Consumption:	11 watts
Product Dimensions:	6.382"(L) x 10.138" (W) x 2.744" (H) 162.1mm(L) x 257.5mm(W) x 69.7mm(H)
Weight:	3.3 lbs., 1.5 kg

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Printed in the USA
Vocalist® Live 3D Owner's Manual 18-0588-A

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