



VOICETONE™ harmonyM

PRODUCT MANUAL

ENGLISH VERSION

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Introduction

Welcome to VoiceTone Harmony-M

Harmony-M was built for the singer who wants the highest quality and most interesting live vocal production possible. It puts a complete vocal production center into your hands including harmony singers that follow your singing and keyboard playing. It's also highly useful as a studio tool allowing the creation of background harmony and even guide parts for singers.

Ease of use and convenience were of utmost importance in the design of Harmony-M. This allows singer/musicians to utilize all of its features quickly and easily.

Harmony-M presents a selection of professionally-authored patches. When out-of-the-box sounds aren't enough, Harmony-M provides editing controls to customize the presets to your preference.

Product information is updated regularly, so be sure to check www.tc-helicon.com for the latest news.

Features:

- o Adds one or two harmony voices that follow your MIDI keyboard playing
- o Overdub-style vocal doubling feature adds richness to your lead voice
- o High quality reverb and delay effects
- o Part A/B switch to allow instant selection of your two favorite sounds
- o Quick and easy tweaking and storage of presets
- o XLR mic level input and output in stereo or mono
- o Clean, studio quality mic preamp with phantom power

About TC-Helicon

At TC-Helicon we truly believe that the voice is the world's most beautiful instrument. We don't mean to degrade other beautiful instruments, but the singing voice is the anthropological source for all things melodic.

You should know there is a dedicated group of engineers, researchers and product specialists based in Victoria BC, Canada, who spend every waking moment of their working lives listening, talking, singing, and interacting with singers and those who have passion for the singing voice.

All this knowledge and experience is used to design products respecting and empowering the modern

vocalist. Our products focus on removing barriers and inspiring creativity in performance. That's why our products range from near-field personal vocal monitors to floor-based vocal multi-effects pedals.

Enjoy!

The TC-Helicon Team
a TC Group company

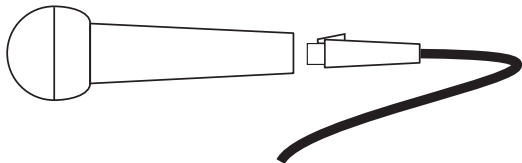
Quick Start

Step 1:

Connect your microphone to a mic cable

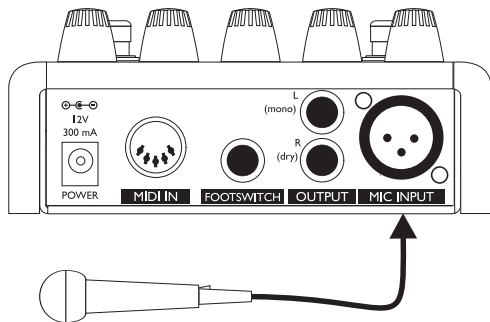
NOTE:

Make sure Harmony-M is not powered at this time.



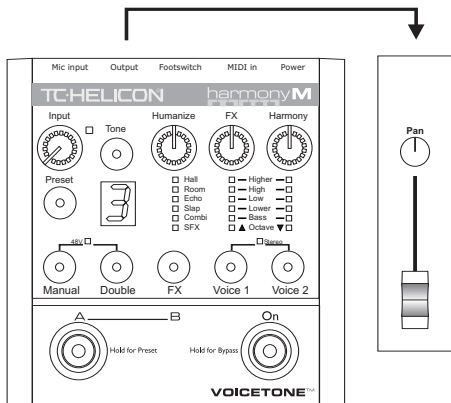
Step 2:

Connect the mic cable to the Mic Input on Harmony-M



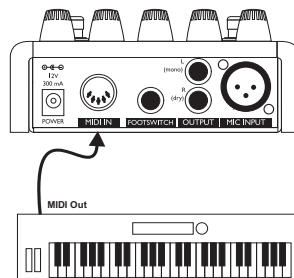
Step 3:

While you're connecting and setting up, lower the fader on your mixer channel to off. Connect a 1/4" phone jack-equipped cable from the Left/(mono) Out to a 1/4" line level input on your sound system.



Step 4:

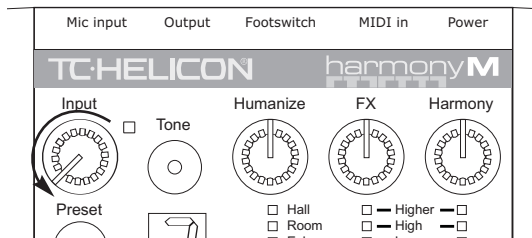
Connect a MIDI cable from your keyboard's MIDI Out to the MIDI IN on Harmony-M. Set your keyboard to transmit on MIDI channel one.



Quick Start

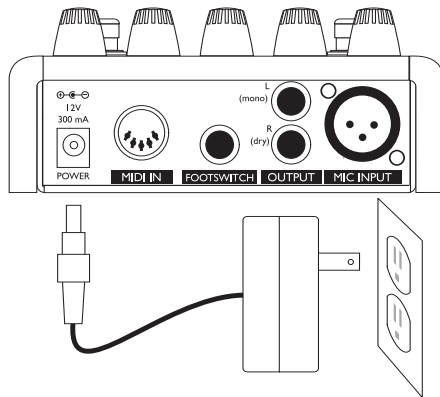
Step 5:

Set the Input Knob fully left then set the Humanize, FX and Harmony control knobs to the detent at the 12 O'Clock position.



Step 6:

Connect Harmony-M's power adapter to main power and to the Power Input on Harmony-M. There is no power switch so plugging it in automatically turns it on.



Quick Start

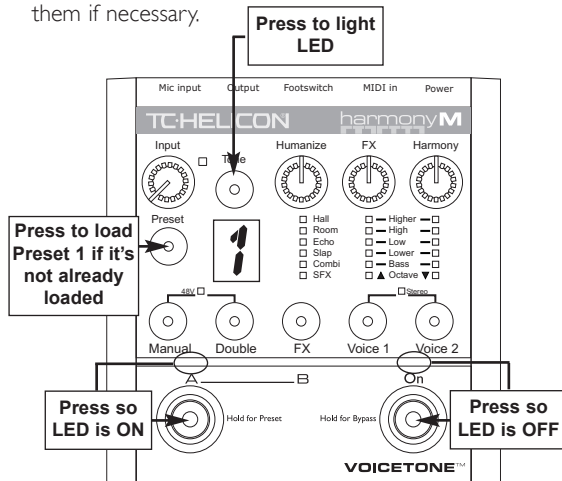
Step 7:

While singing through your microphone, raise the Input Knob until the Input Light turns green, sometimes orange on louder parts, but never red.



Step 8:

In preparation for your first listen, check that the LEDs conform to the status shown in the boxes below. You can press the button associated with the LEDs to change them if necessary.



Quick Start

Step 9:

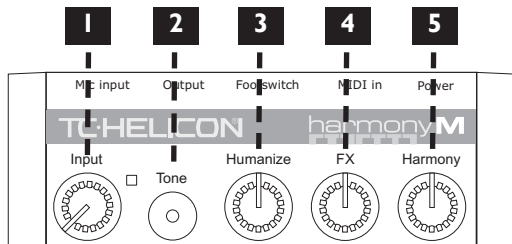
Slowly raise the fader on your mixer channel as you sing into your mic. Once you've reached a comfortable listening level you should hear your voice clearly with some reverb effect added.

Now you're ready to hear Harmony-M's harmony voices. Press the On footswitch and sing a song you know while playing the chords to the song on your keyboard.

You can now experiment with all of Harmony-M's features starting by pressing the Preset button to load the different presets and then pressing the A/B footswitch to hear each preset's A and B settings.

Please read this short manual to ensure you get the most from Harmony-M!

Front Panel



1. Input Control and LED

Adjust the Input Knob so that while you sing, the LED beside it flashes green, sometimes orange but never red.

2. Tone Button

This engages the Live Engineer Effects which automatically modifies your voice and makes it sound smoother and brighter. When engaged, this effect is always on your voice, even in Bypass.

3. Humanize Control

Allows you to raise or lower the amount of variation in the pitch and timing of the harmony voices. At TC-Helicon, we call this “humanization”.

4. FX (Effects) Level Control

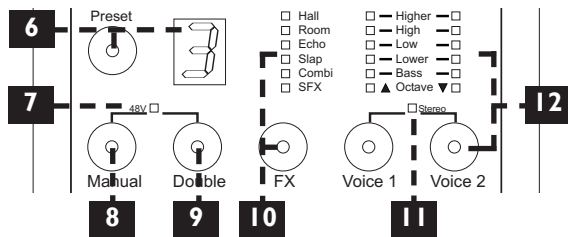
Raises or lowers the mix level of the effect selected with the FX button. Full right position is approximately 50% wet.

5. Harmony Level Control

Adjusts the mix levels of the harmony and double effects. Full right position is 100% wet, which means your dry voice is muted.

Note that the Humanize, FX and Harmony controls are “global” meaning that they affect all presets. Also, they have been programmed for optimum sound at the detent in the center position. This is intended to reduce the time required for adjustments.

Front Panel



6. Preset Select Button and Preset Display

Press to cycle through the 5 presets numbered 1 to 5 shown in the Preset display. Hold to store edits you make. The dot in the corner of the display indicates that MIDI is received on the correct channel. To change the receive channel, see How to Set the MIDI Receive Channel on page 15.

7. 48 Volt Phantom Power LED

For condensor mics, hold the Manual and Double buttons for 2 seconds to engage and disengage phantom power.

8. Manual Mode Button

When lit, this engages direct control of four harmony voices as opposed to the two harmony voice method interpreted from your playing.

9. Double Voice Button

Press this button to simulate the sound of you singing along with yourself for added thickness.

10. FX Button and LED Display

Pressing the FX button cycles through the effect styles and FX Off (no LEDs lit) for the current preset.

11. Stereo Select Button

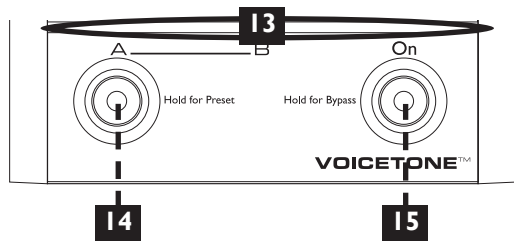
Press and hold the Voice 1 and Voice 2 buttons for 2 seconds to toggle between stereo and mono output.

12. Voice Buttons and Display

Ensure that the Manual button is not lit, press either of the Voice 1 or Voice 2 buttons to:

- A) Change the associated voice's harmony interval
- B) Enable the harmony voice when its LED is off
- C) Turn the voice off

Setting the same interval for both voices adds thickness to the harmony voices.



13. LED Indicator Bar

This translucent bar indicates the A or B selection of each preset and status of the On footswitch.

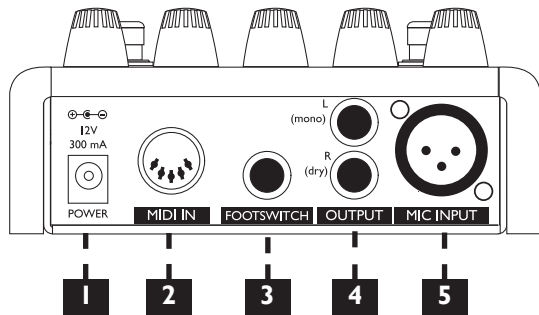
14. Preset A and B Select Footswitch

If you only need to access your two favorite sounds in performance, tapping the A/B footswitch will toggle between them quickly. If you would like to access more presets with this footswitch, hold it to enter Preset select mode. Now, pressing the A/B button cycles forward through the five "A" preset settings or "B" preset settings, depending on whether an A or B was loaded when you held the footswitch.

15. On Footswitch

Tapping this footswitch engages or disengages the doubling and harmony effects in the current preset. The reverb and delay FX will remain active on your voice. Holding this footswitch for one second enters Bypass mode which disengages all processing except for Tone. This allows you to talk to your audience without any processing other than the Tone effect. To exit Bypass mode, tap this footswitch (no holding is necessary).

Back Panel



1. Power Input

Accepts the connector from the supplied DC power adaptor. Connecting power to Harmony-M turns it on immediately as there is no on/off switch on the product.

2. MIDI In

Plug a MIDI cable from your MIDI controller keyboard or sequencer into this jack.

3. Footswitch Input

Connecting an optional TC-Helicon Switch3 footswitch here allows placement of Harmony-M on your keyboard. The Switch3 footswitch controls A/B, Bypass and On functions from left to right. This jack can also accept a single button pedal for remote control of the On footswitch. The footswitch holding functions, MIDI Setup and Preset Select are not accessible with an external footswitch.

4. Outputs

These 1/4" jacks supply the main output of Harmony-M in stereo or mono. For more information on mono operation see "External Mixing with Mono and Dry Outputs" in the "For Advanced Users" section.

5. Mic Input

Plug an XLR-equipped microphone cable from your mic into this jack.

Getting to Know Harmony-M

How to Set the MIDI Receive Channel

For harmonies to be cued from your playing, the MIDI channel your keyboard transmits on and Harmony-M's receive channel must be set the same. If the dot in the Preset display window does not flash when you play your keyboard despite a correct MIDI cable connection, Harmony-M's receive channel can be set as follows:

Press the A/B and On footswitches together. Play a note on your keyboard. Press the On footswitch to exit back to normal operating mode.

Loading Presets

You can load presets by MIDI program change message or by hand. Press the Preset button to advance to the next preset and change the sound. To access the two sounds assigned to a preset while playing, press the A/B footswitch to toggle between them. To enable or disable MIDI program change reception and to learn more about MIDI remote control, see MIDI Setup Mode in the For Advanced Users section.

If you would like to access more than two presets while playing, hold the A/B footswitch to enter Preset Select mode. In this mode, pressing the A/B button cycles forward through the five "A" preset settings or "B" preset settings, depending on whether an A or B was loaded when you held the footswitch.

Making Harmonies

Play a song on your keyboard while you sing. Press the On footswitch to hear the harmony voices in the current preset. Press the On footswitch again to mute the harmony voices so you can sing with no harmony.

Singing or Talking Without FX or Harmony

You can enter Bypass mode by holding the On footswitch for one second. This allows you to talk to your audience or sing with only the Tone effect on your voice regardless of what was set in the current preset. To exit Bypass mode, tap the On footswitch.

Getting to Know Harmony-M

Using the Tone Button

When you activate the Tone button, your voice will sound smoother and brighter. There are three high quality studio effects that accomplish this: adaptive “Shape” EQ, adaptive compression and de-essing.

Adjusting the Harmony Level

Turn the Harmony control to raise or lower the amount of harmony added to your voice. If the Double button is on, the extra voice it adds will be adjusted as well.

Changing the FX Volume

Turn the FX control knob to raise or lower the mix level of the effect style selected with the FX button.

Thicken Your Voice with the Double Button

Activating this button will simulate the effect of you singing along with yourself to make your lead voice sound thicker. It can be stored on or off in each preset.

Editing Presets

You can change the Double, FX, Voice 1, Voice 2 and Manual mode features to your liking by pressing their associated buttons. Pressing the Preset button will cancel your edits and load the next preset.

Storing Edited Presets

You can store an edited preset for the next time you need it. Press and hold the Preset button to store both the A and B settings for that preset number. If you save your two favorite A and B settings in preset number 1, they will be ready when you power up without you having to scroll forward to load them each time. Note that the positions of the Input, Tone, Humanize, FX, and Harmony controls are not individually saved with presets, they are global (affecting all presets).

Getting to Know Harmony-M

What Do the Voice 1&2 Buttons Do?

Pressing either of these buttons can be used to select a harmony “voicing” for that voice or to turn the voice off. Voicing is the term describing a pitch-shifted version of your voice at a musically determined pitch. When the Manual button is lit, these buttons become inactive.

What Does Higher, Lower etc. Mean?

These names define the harmony arrangement in the current preset. The following list describes the typical voicing intervals produced by Harmony-M:

- o Higher - Generally a 5th interval or 7 semitones above your voice
- o High - Generally a minor or major 3rd interval or 3-4 semitones above your voice
- o Low - Generally a minor or major 3rd interval or 3-4 semitones below your voice. This is the same as the Higher voicing only one octave below it.
- o Lower - Generally a 6th interval or 8 semitones below your voice. This is the same as the High voicing only one octave below it.

- o Bass - This deep voice remains on the root note of your current keyboard chord even when your voice's pitch is moving up and down
- o Octave Up and Down - Follows your voice exactly 12 semitones above (Octave up arrow) or below (Octave down arrow) regardless of the chord you play

Changing the FX

Press the FX button to change the reverb and delay style in the preset you are currently on which can be stored as the preset's A or B setting.

Remote Control with an Optional Footswitch

You can connect either a single button momentary footswitch or a TC-Helicon Switch3 footswitch to allow handsfree control of Harmony-M. A single button footswitch remotely toggles only the On function. The Switch3 footswitch controls A/B, Bypass and On functions from left to right. The footswitch must be connected at power up for Harmony-M to recognize whether it is a single or triple function footswitch. MIDI Setup mode and Preset select are not possible with the footswitch.

For Advanced Users

More Information on Manual Mode

The Manual button disengages Harmony-M's musical intelligence. If you sing while the Manual button is lit, you can directly "play" four harmony voices as if they were a polyphonic keyboard part. Your harmonies will not move automatically in response to your sung melody as they do in normal operation, but you will be capable of unique and unusual harmony arrangements. This method of harmony generation is also called "Notes" or "Vocoder" in other harmony products and it is most commonly used by commercial MIDIfiles.

If you want to use commercial MIDIfiles that have been authored with harmony control tracks, set the Manual button to on and ensure that the MIDI channels of your MIDIfile and Harmony-M match.

The Voice 1 and Voice 2 buttons as well as their associated LEDs are disengaged in Manual mode because the notes you play on your keyboard determine what the harmony notes are.

You can store a preset with the Manual function active by holding the Preset button.

Advanced FX Style Select

Each effect style (Hall, Room etc.) has three selections. To browse additional Hall sounds, for example, first cycle the FX button to the Hall style, then hold the FX button. Tap the FX button to sample the options that are numbered in the preset display. Once you've found one you like, press and hold the FX button to exit. Hold the Preset button to store if desired. Note that cycling through the FX styles again outside of Advanced FX mode will return your edit to the default style.

How to Choose Alternate Tone Settings

The factory default setting for the Tone button accommodates a wide range of singers but there are options to further customize this feature.

To access the Alternate Tone settings, hold the Tone button until you see the Preset number display flash. You

For Advanced Users

can tap the Tone button to cycle through the numbered choices shown below:

- d: Default setting best for most situations
- 1: Choose this if you have a very bright-sounding PA
- 2: This option adds “warmth” to your voice
- 3: Increased compression. Caution: this slightly increases the likelihood of feedback

Hold the Tone button to exit. Toggling the Tone button will now activate your alternate choice.

Changing the Number of Presets

The default configuration of Harmony-M is to offer five presets each having an A and B setting. When using the Preset select mode this allows you to cycle through five presets with a reasonable number of footswitch or Preset button pushes. If you want access to more presets and are willing to step through more than five, or would like to reduce the number so you can cycle through three favorites for example, there is a way to set this in Harmony-M.

To set the accessible number of presets, power up holding the Preset button. After a moment, the number “5” will show the default number of presets. Tap the Preset button to extend the limit to up to ten (shown as “0”) or down to three (1 and 2 are not options). Hold the Preset button to store this setting and exit to normal operation. Note that a) the extra presets are not pre-programmed so you can build your own and b) MIDI program change messages access all presets regardless of the number accessible with the footswitch.

External Mixing with Mono and Dry Outputs

If you prefer, you can leave the level balancing between your dry voice (Tone active only) and a 100% wet, mono signal of the Harmony, Double and FX to your sound engineer. Ensure the Stereo LED is not lit then connect the outputs to two channels of your audio mixer. The Left Out will be the wet effects and the Right Out will be your dry voice. These can be adjusted as needed by your sound engineer. The Harmony control should be set to its full right position in this output scheme.

For Advanced Users

MIDI Setup Mode

The MIDI operations of Harmony-M will work for most simple setups, but there may be times when more detailed control is necessary. For this, it's possible to change the default settings for several necessary options in the MIDI Setup mode. Harmony-M's buttons have alternate functions in this mode and are listed below.

To enter MIDI Setup Mode, hold the A/B and On footswitches. The 3 LEDs in the indicator bar will flash indicating MIDI Setup mode. It is not possible to enter MIDI Setup mode using an external footswitch.

To exit MIDI Setup mode, press the On footswitch only. In MIDI Setup mode, the following settings are selected by the buttons on the face of Harmony-M:

- o Main Receive Channel (Selected by the Manual button) - Receive Channel is ready to be set by default as you entered MIDI Setup mode (Manual button lit). To change the receive channel:

1. Play a note on your keyboard.
2. Manually adjust the channel shown in the Preset display window with the Voice 1 and Voice 2 buttons.

The LED in the Preset button indicates channel ten and the 10s position. If the Preset button is lit and the number 6 is shown in the window for example, the receive channel is set to 16. The default channel is 1.

- o Continuous Controller (CC's) Receive Channel (Selected by the Double button) - By default, the CC receive channel changes along with the Main receive channel. If you need to change the CC channel separately to avoid unwanted parameter changes from your arranger keyboard or a sequencer, press the Double button and then move a slider on your keyboard that's transmitting on the desired CC channel. This can also be manually adjusted with the Voice 1 and Voice 2 buttons. To disable CC reception completely, use

For Advanced Users

the Voice buttons to set a value of 0 in the Preset display.

- o Program Change Receive On/Off (Selected by the Tone button) - The Tone button configures whether or not Harmony-M will respond to program change messages from your keyboard or sequencer. When the Tone button is lit, program changes are accepted and this is the default.
- o Keyboard Split Point and Zone - (Selected by the FX button) After pressing the FX button, play a note on your keyboard to define the split point and then play a note above or below to determine whether the active zone is above or below this note. No display is shown for this so you can test by playing your keyboard to confirm it is set correctly. Hold the FX button to return to the default setting of one zone/all notes active.

To Reset Only the MIDI Options

This allows you to reset the MIDI options to default values without resetting any presets you've created. Enter MIDI Setup mode by holding the A/B and On footswitches.

To reset the MIDI options, hold the Manual, FX and Voice 2 buttons for 3 seconds. Exit to normal operation mode by pressing the On footswitch.

Performing a Factory Reset

A reset will delete all of your edited presets and return all MIDI settings to the factory defaults.

To reset all, insert the power connector while holding the Manual and Voice 2 buttons for 3 seconds. Harmony-M will boot normally after the memory is initialized.

For Advanced Users

How To Change the Tuning Reference

By default, Harmony-M is tuned to A=440 Hz and the harmony voices will sound in tune when you sing with a keyboard tuned to A=440. If you will be playing and singing with another instrument tuned to a different reference e.g. a piano that has dropped in overall pitch, you can change Harmony-M's reference with the following procedure.

Press and hold the Manual, Double and FX buttons simultaneously as you plug in the power adapter. Then place your microphone near the instrument you want to tune to and play any single note from it. Press any button to exit to normal function.

Note that you must also tune your keyboard to the external reference. Your keyboard, the reference instrument and the harmony voices' pitch should now match.

Note that the tuning reference is reset to A440 the next time power is removed from Harmony-M.

How to Use MIDI CC's

MIDI CC's offer precise remote control of Harmony-M's features. These control messages are typically transmitted from a sequencer or controller keyboard that is equipped with assignable faders and buttons.

When using CC's it's necessary to:

- o Assign the correct CC numbers to the faders and buttons on your transmitting device
- o Set the correct MIDI channel
- o Ensure CC control is active in MIDI Setup Mode

See the table on the next pages for CC numbers and assignments.

For Advanced Users

MIDI CC Chart

Parameter	CC	Comments
Modulation	1	0-127, controls vibrato intensity
Sustain pedal	64	0-63=Off, 64-127=On
Bypass On/Off	114	0-63=Off, 64-127=On
Harmony Mute	110	0-63=Off, 64-127=On
Harmony Level	12	0-127
Voice 1 Voicing	14	0=Voice Off, 1=Octave Down...6=Higher
Voice 2 Voicing	18	0=Voice Off, 1=Octave Down...6=Higher
Preset A/B Select	30	0-63=A, 64-127=B
Double On/Off	115	0-63=Off, 64-127=On
Tone On/Off	117	0-63=Off, 64-127=On
Tone Select	111	0=Default, 1-3 Options as listed earlier in this manual.

For Advanced Users

MIDI CC Chart cont.

Parameter	CC	Comments
FX Level	91	0-127
FX Select	113	0-2=Hall, 3-5=Room, 4-6=Echo, 7-9=Slap, 10-12=Combi, 13-15=SFX
Manual On/Off	116	0-63=Off, 64-127=On

FAQ and Troubleshooting

My keyboard doesn't change the harmonies.

What's wrong?

Confirm Harmony-M is receiving MIDI:

1. Check the dot in the Preset display is flashing when you play your keyboard. If not set the MIDI channel according to the directions listed in this manual.
2. Check/replace the MIDI cable
3. Ensure that you are playing keyboard chords made up of at least a root note and a major or minor third.

The Voice 1 and Voice 2 buttons no longer work.

Turn off the Manual button.

My FX knob is turned up but the sound is still dry.

You're likely set to the Off FX style. Press the FX button to activate and cycle through the FX styles.

I don't hear my voice - only harmony and FX.

Lower the Harmony control knob value.

I hear only my dry voice on the Right Out jack.

Hold the Voice 1 and Voice 2 buttons to exit Mono mode.

How do I talk to the audience with no FX on?

Hold the On footswitch to enter Bypass mode. Press again without holding to exit.

Can I turn the harmonies off in a preset?

Yes, press either or both of the Voice 1 or Voice 2 buttons so that the LEDs above them are not lit.

I'd like my sound tech to mix the levels. Is that possible?

Yes. See External Mixing with Mono and Dry Outputs in the For Advanced Users chapter.

FAQ and Troubleshooting

Keyboard Performance Tips

To ensure that the harmony voices follow your keyboard playing as accurately as possible, it's best to play simple keyboard parts cleanly. In chords without a clear third, Harmony-M will assume a major chord, so when using these chords in a minor key, you will need to play a minor chord with the same root note now and then to put it into chord memory. Also, if you want to sing right at the beginning of your song, it's important to play a chord just before you sing.

Singing Performance Tips

The more in-tune you sing, the better the harmonies will sound. There is a slight amount of pitch correction on the harmony voices but it's mostly up to you! Try to ensure that your keyboard amp or monitor is not facing directly into your mic as this can confuse Harmony-M's pitch detection and result in poor sounding harmony voices.

Where can I find support for this product?

Point your browser to www.tc-helicon.com. On our webpage, you'll find links to our support site and support contact information.

Inputs

- ♦ Mic Connector: Balanced XLR, Input Impedance 1kOhm
- ♦ Mic Input Sensitivity @ 0dBFS -44dBu to +2dBu
- ♦ Mic Input Sensitivity @ 12dB headroom -56dBu to -10dBu
- ♦ EIN -126dBu @ max. mic amp gain, $R_g = 150 \text{ Ohm}$
- ♦ MIDI In Connector: Standard 5 pin DIN
- ♦ Footswitch In: 1/4" 3 conductor phone jack
- ♦ Power Input: 12 VDC 300 mA, tip negative

Analog Outputs

- ♦ Main Output Connectors: Balanced TRS 1/4" jacks
- ♦ Output Impedance: 40 Ohm
- ♦ Output Level: +14 dBu @ 0dBFS

Input to Output Analog Audio Performance

- ♦ Dynamic Range, Mic. @ Min gain >108dB, 20 Hz - 20kHz *A-weighted
- ♦ Dynamic Range, Mic. @ -18dBu sensitivity > 104dB, 20hz - 20kHz*
- ♦ THD+ Noise, Mic. @ Min gain <-90dB
- ♦ Frequency Response, max gain -1.5dB @ 40 Hz, +0/-0.3 dB (200Hz to 20 kHz)

Conversion Characteristics

- ♦ Sample Rate 48 kHz, Converter AKM AK4620B
- ♦ AD / DA Conversion 24 bit, 128x oversampling bitstream

EMC & Safety

- ♦ Complies with EN 55103-1 and EN 55103-2 FCC part 15, Class B, CISPR 22, Class B
- ♦ Certified to IEC 65, EN 60065, UL6500 and CSA E60065 CSA FILE #LR108093

Environment

- ♦ Operating Temperature 32° F to 122° F (0° C to 50° C)
- ♦ Storage Temperature -22° F to 167° F (-30° C to 70° C)
- ♦ Humidity Max. 90 % non-condensing

Supplementary

- ♦ Dimensions 130mm x 132mm x 41mm (5" x 5.25" x 1.5")
- ♦ Weight 1.5 lb. (0.72 kg)
- ♦ Warranty Parts and labor 1 year

All specifications and features subject to change without notice.

TC-Helicon Harmony-M		MIDI Implementation Chart:		2008.5.20
Function	Transmitted	Recognized	Remarks	
Basic Channel				
Default	X	1-16	Memorized	
Changed	X	1-16	"	
Mode				
Default	X	3		
Messages	X	X		
Altered	X	X		
Note Number	X	0-127		
Velocity				
Note ON	X	X		
Note OFF	X	X		
After Touch				
Key's	X	X		
Ch's	X	X		
Pitch Bender	X	0	0-2 semitones fixed	
Control Change	X	0	See CC chart	
Prog Change				
:True	X	1-10	Default is 1-5	
:CC-00	X	X		
:CC-32	X	X		
System Exclusive	X	0	For development only	
System Common				
:Song Pos	X	X		
:Song Sel	X	X		
:Tune	X	X		
System Real Time				
:Clock	X	X		
:Commands	X	X		
Aux Message				
:Local ON/OFF	X	X		
:All Notes OFF	X	0		
:Active Sense	X	X		
:Reset	X	X		
			0=Yes X=No	
Mode 1 = Omni On, Poly		Mode 2 = Omni On, Mono		
Mode 3 = Omni Off, Poly		Mode 4 = Omni Off, Mono		