PIGTRONIX

Ringmaster
analog multiplier

User's Guide

PIGTRONIX®


LFO
DC 18V
RATE
DEPTH
SOURCE
RING
SAMPLE
+
HOLD
OUT
CLEAN
GAIN
TUNE
FOLLOW
TREM
SPEED
AMOUNT
RINGMASTER
analog multiplier
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Contents

1. Welcome to The Ringmaster

Thank you for entering the realm of Pigtronix. The Ringmaster is a monophonic, pitch-tracking analog multiplier. This pedal is capable of tracking both guitar and bass guitar as well as keyboards, vocals, horns, drums and virtually any other monophonic sound source.

The Pigtronix Ringmaster is an effect known as Ring modulation. Ring modulation is the multiplication of two signals resulting in the sum and difference of all of their frequencies. The two signals for the Ringmaster are your instrument signal, and a sine wave carrier produced internally. While the Ringmaster will track only one note at a time, it tracks that one note very well. The Ringmaster's analog pitch recognition system controls the sine wave carrier that can be combined to output a huge variety of sounds. The Ringmaster's sonic signature can be further animated with a variable source control, external carrier input jack, SAMPLE + HOLD, and pitch tracking (FOLLOW) functionality.

Experiment with the placement of your Ringmaster device in your signal chain. The pitch tracking system performs best when a cleaner instrument signal is used.

In keeping with Pigtronix tradition, the controls on the Ringmaster have been tuned to provide the fattest possible tone and the widest range of musical possibilities. The Ringmaster was born out of a passion for versatile, expressive musical effects; it is built to last and designed to inspire.

We hope that the Ringmaster will provide you with years of creative satisfaction.

1.1 Safety Precautions

The safety precautions listed below are intended to ensure your safety whenever you use the Ringmaster.

NEVER OPEN THE CASE - Never try to separate the two pieces of the chassis from one another and/or modify the equipment. Opening this device will effectively void the warranty.

STOP USE IN CASE OF PROBLEM - Stop using the equipment if ever you should notice smoke or a strange odor coming from it. Contact Koltai@pigtronix.com for service.

AVOID HIGH TEMPERATURES & HEAT BUILD UP - Never cover the power supply with cloth or other objects. Built up heat creates a danger of equipment deformation and fire. Do not expose the Ringmaster to direct sunlight, heating devices, or other extreme temperatures.

USE SPECIFIED POWER ADAPTER ONLY - Be sure to use only the 18-Volt DC 300mA Adapter that came with your Pigtronix Ringmaster.

DO NOT EXPOSE TO WATER/BEER - To reduce the risk of fire or electric shock, do not expose your Ringmaster to rain or moisture. If water gets inside the unit, turn off the power.

Thank You

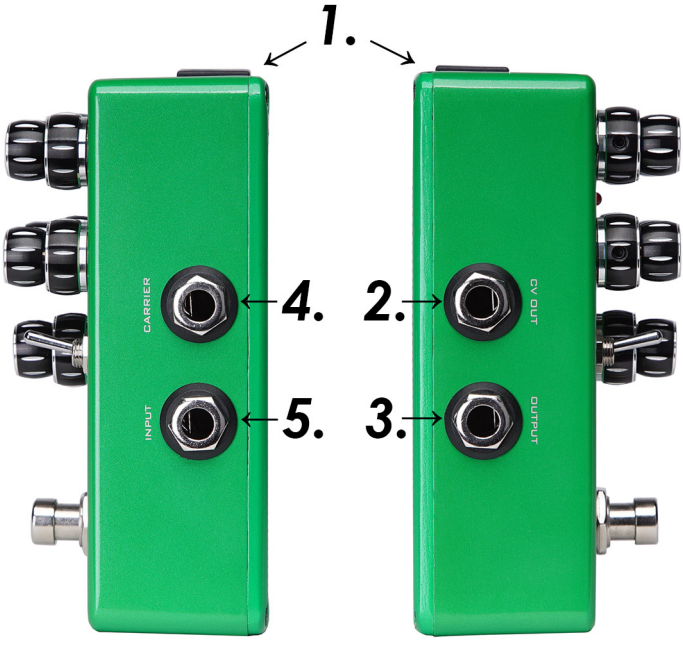
The Ringmaster represents a decade of continuous R&D involving some of the top minds in the audio industry. Pigtronix would like to formally thank the following individuals for their help in creating the Ringmaster: Thomas Elliott, Nick Cote, Cyril Lance, Howard Davis, Ben Artes, Ray Heasman, Steve Turnidge, David Buchter, Andy Pitcher, Fischer Mao, Vernon Reid, Doug Wimbish, Fredrick Thordendal and Teddy Kumpel.

—**Pigtronix**

2. Anatomy and Functions

2.1 The Interface

Jacks



1. **DC 18V** - Use only the 18-Volt, 300mA, negative tip power supply that came with your Pigtronix Ringmaster. Using the wrong power supply is likely to result in a damaged pedal.

2. **CV OUT** - This jack is an auxiliary output for the summed control voltage (CV) content from the tracking and modulation sources. The CV OUT can be sent to other pedal CV IN jacks that use the Hz/V tracking standard, such as the Pigtronix Mothership 2.

3. **OUTPUT** - Effect output. Plug in your amp, mixer, or DI box here.

4. **CARRIER** - This jack is an auxiliary input for external carrier signals. When using the CARRIER input, the external signal will multiply with the internal sine wave carrier in place of your instrument signal.

   Note: *The internal sine wave carrier signal can be obtained from the ring of the CARRIER jack. Using a TRS (Stereo) splitter, the CARRIER jack can double as an external carrier input, on the* **TIP***, and output for the internal tracking sine wave carrier, on the* **RING***.*

5. **INPUT** - Effect input. Plug in your instrument here.

Knobs and Switches

6. **ENGAGE** - This footswitch turns the entire Ringmaster on and off. When the engage light is turned off, the Ringmaster is true bypassed.

7. **LFO RATE and DEPTH** - This is a low frequency oscillator (LFO) which modulates the pitch of the sine wave carrier.

   RATE - This knob determines how fast the LFO modulates the pitch of the sine wave carrier.

   DEPTH - This knob determines how much the LFO signal modulates the pitch of the sine wave carrier.

8. **SOURCE and RING**

   SOURCE - This knob determines the source of the internal carrier signal. Counterclockwise is a tunable sinewave, while clockwise is the fundamental squarewave.

   RING - This knob determines the volume of the ring modulated signal (RING) voice. This is the multiplied signal.

9. **OUT and CLEAN**

   OUT - This knob determines the master output volume of all your blended voices.

   CLEAN - This knob determines the volume of your clean signal voice.

10. **GAIN and TUNE**

    GAIN - This knob determines the amount of gain of the internal sine wave carrier. Turning this control up will add harmonic distortion to the internal carrier, and increase the volume of the RING voice.

    TUNE - This knob determines the tuning of the sine wave carrier.

11. **FOLLOW** - This toggle turns on the FOLLOW feature in the down position. When engaged, the sine wave carrier follows your instruments pitch using the internal pitch tracking.

12. **SAMPLE + HOLD** - This is a random pitch generator for the sine wave carrier.

    SPEED - This knob determines how fast the SAMPLE + HOLD modulates the pitch of the sine wave carrier.

    AMOUNT - This knob determines how much the SAMPLE + HOLD modulates the pitch of the sine wave carrier.

13. **TREM** This toggle turns on the low frequency mode of the sine wave carrier in the down position. When engaged, the TREM mode causes the ring modulator to sound like a tremolo effect. When TREM is combined with the FOLLOW function, the Ringmaster's internal pitch tracking changes the tremolo speed in response to your instruments pitch.

3. Getting Started

3.1 Basic Hook Up

1. Unpack your Ringmaster and place it on a flat, stable surface.
2. **Make sure you are using the 18-Volt DC (negative center) power supply that came with your Pigtronix Ringmaster.**
3. Plug the power cord into the 18VDC jack on the back of the Ringmaster and then plug the power adapter into an electrical socket.
   The Ringmaster is now powered up. To turn the device off, unplug it from the wall or turn off the power going to the 18VDC supply.
   We recommend that you do not leave your Ringmaster powered up for long periods of time when it is not in use.
4. Plug your instrument into the INPUT jack and plug your amplifier into the OUTPUT jack.

3.2 Guided Tour

The following steps will guide you through the sonic palette of the Ringmaster and show you how to access the range of tones that it has to offer.

1. Set all of the controls *fully* counter-clockwise, and set each toggle in the up position. Make sure the LED is off. The Ringmaster is in bypass mode. Play your instrument and make sure a clean sound is passing through the pedal.
2. Turn the OUT, CLEAN, and RING knobs up to 12:00. Click the Engage footswitch to turn the Ringmaster on. The LED will turn on.
3. Play the highest string on your instrument and adjust the TUNE control so that the pitch of the ring modulator is in tune with the pitch of the clean signal. Once it is in tune, play your instrument in all registers. The sine wave carrier is not currently tracking the pitch of your instrument, this results in encouraged dissonance.
4. Turn the RATE and DEPTH knobs up to 12:00 to modulate the sine wave carrier with the internal LFO. Listen to the vibrato effect and how the pitch modulates at a consistent rate. Explore the range of the RATE and DEPTH knobs.
5. Return the RATE and DEPTH knobs to zero.
6. Turn the SPEED and AMOUNT knobs up to 12:00 to modulate the sine wave carrier with the internal SAMPLE + HOLD. Notice the effect plays itself by randomly choosing pitches for the sine wave carrier. Explore the range of the SPEED and AMOUNT knobs.
7. Return the SPEED and AMOUNT knobs to zero.

8. Turn the FOLLOW toggle down to activate pitch tracking, the sine wave carrier will now follow the pitch of your instrument.

9. Play the highest string on your instrument and adjust the TUNE control so that the pitch of the ring modulator is in tune with the pitch of the clean signal. Once it is in tune, play your instrument in all registers. The sine wave carrier is currently tracking the pitch of your instrument, this is an intelligent ring modulator and is less harmonically dissonant.

10. Turn up the GAIN knob to 11:00 to hear its effect on the RING voice. Explore the range of the GAIN knob. Higher settings will introduce more distortion to the sine wave.

11. Turn up the SOURCE knob to 12:00 to hear its effect on the RING voice. Explore the range of the SOURCE knob. This knob will blend between a tunable sine wave and the fundamental square wave.

12. Turn the TREM toggle down to active the tremolo effect. TREM lowers the frequency range of the sine wave carrier and effectively gives you a tracking tremolo. Notice the speed of the tremolo increases with your instruments pitch when FOLLOW is on. Adjust the range of the TREM speed when FOLLOW is on with the TUNE knob. When FOLLOW is off the TREM speed is static and is adjusted with the TUNE knob.

CARRIER Jack

1. Plug a TS (Mono) cable into CARRIER. The signal will replace your instrument signal and multiply with the internal sine wave carrier. It is recommended that a sine, triangle, or square wave be used as the external carrier signal. These can be obtained from the Pigtronix Mothership 2.

2. Plug a TRS (Stereo) cable into CARRIER. The signal on the Tip will replace your instrument signal and multiply with the internal sine wave carrier. The signal on the Ring is an output for the internal sine wave carrier, this can be used as a sine wave output that tracks the pitch of your instrument when FOLLOW is on.

CV OUT

1. Plug a TS (Mono) cable into CV OUT. The Tip is now carrying the summed CV signals of the Ringmasters FOLLOW pitch tracking, LFO, and SAMPLE + HOLD. These CV signals can be sent to another pedal or system that interfaces with the Hz/V CV standard, such as the Pigtronix Mothership 2.

4. Ringmaster and Mothership 2

The Ringmaster is designed to interface with the Pigtronix Mothership 2. When combined, these two units provide the complete set of voices from the first Mothership pedal with modulation and tracking performance that go far beyond the capabilities of the original Pigtronix Mothership Analog Synthesizer.

The Ringmaster can be used solely as a **CV modulation box** by sending CV signals to the Mothership 2. Connect the Ringmaster CV OUT jack to the Mothership 2 EXPRESSION jack. When the Ringmaster is disengaged, the CV OUT jack is as well. This can be useful to control when the Ringmaster sends CV modulation to the Mothership 2.

Pitch Modulation - Use the Ringmaster's LFO section with the Moth-

ership 2 for some sweeping tones. Connect the Ringmaster CV OUT jack to the Mothership 2 EXPRESSION jack and play with the RATE and DEPTH knobs. With the Mothership 2 is in SYNC mode, sweeping overtones are produced.

Random Tone - The Ringmaster's SAMPLE + HOLD can be used as a random tone generator for the Mothership 2. Connect the Ringmaster CV OUT jack to the Mothership 2 EXPRESSION jack and play with the SPEED and AMOUNT knobs.

Sync Sweep - The Ringmaster's SAMPLE + HOLD and LFO circuits can be used to create moving overtones when the Mothership 2 is in SYNC mode. Connect the Ringmaster CV OUT jack to the Mothership 2 EXPRESSION jack and play with the SPEED and AMOUNT knobs.

External Carrier - Connect your instrument into the Mothership 2 INPUT jack and take the Mothership 2 OUTPUT jack and connect it to the Ringmaster CARRIER jack. Then take the SUB OUT jack and connect it to the INPUT of the Ringmaster. This will produce a wide range of sounds depending on the waveform sent by the Mothership 2, or if SYNC is engaged.

Bass Tone - Swap the location of where the Mothership 2 SUB OUT and OUTPUT jacks are going to the Ringmaster for the External Carrier setting for a deep bass tone.

FM Synthesis - Use a TRS splitter to access the Ring of the CARRIER jack on the Ringmaster and send the internal sine wave carrier to the Mothership 2 EXPRESSION jack for FM synthesis (Frequency Modulation).

GO FOR IT!

5. Pigtronix Limited Warranty

Your Pigtronix effect pedal comes with a 1-year limited warranty on parts and workmanship. During the warranty period we will repair or replace, at our option, defective parts or pedals free of charge, and return them to the owner. Warranty service does not include damaged, modified, or misused pedals and such pedals will be subject to a standard repair charge.

What you must do: First, contact us directly via email and describe the problem to us. If the problem cannot be resolved we will have you send the pedal directly to us for servicing.

How to contact us for warranty service:

Email: tech@pigtronix.com
Phone: 631-331-PIGS (7447)

Warranty Limitations: This warranty does not cover defects resulting from improper or unreasonable use, accident, unauthorized tampering or modifications; and, warranty shall be considered void if Ringmaster chassis has been opened. Please consult the instructions and warnings in this manual for proper use. Warranty is only valid if your Ringmaster has been properly registered within 30 days of original purchase date, and upon warranty registration, will be valid for 12 months from original purchase.

To validate your 1-year, limited warranty, please register your Ringmaster, **within 30 days of purchase**, on the web at:

`www.pigtronix.com/warranty`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MOTHERSHIP 2 by Pigtronix is finally here! Fasten yr cheek belts & get funked up!"
Bootsy baby!!!
MOTHERSHIP 2
analog synthesizer
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