behringer 1047 Multi Mode Filter Resonator Module

behringer 1047 Multi Mode Filter Resonator Module User Guide

Contents

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FAQ

- **Q:** Where can I find warranty information?
  - **A:** For warranty terms and conditions, please refer to Music Tribe's Limited Warranty details online at community.musictribe.com/support.
- **Q:** Can I clean the module with water?
  - **A:** No, clean only with a dry cloth as mentioned in the safety instructions.
- **Q:** What type of filter is used in this module?
  - **A:** The module features a 12 dB State Variable Filter.

Safety Instruction

1. Please read and follow all instructions.
2. Keep the apparatus away from water, except for outdoor products..
3. Clean only with a dry cloth.
4. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

5. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
6. Use only attachments/accessories specified by the manufacturer.
7.  Use only specified carts, stands, tripods, brackets, or tables. Use caution to prevent tip-over when moving the cart/apparatus combination.
8. Avoid installing in confined spaces like bookcases.
9. Do not place near naked flame sources, such as lighted candles.
10. Operating temperature range 5° to 45°C (41° to 113°F).

LEGAL DISCLAIMER

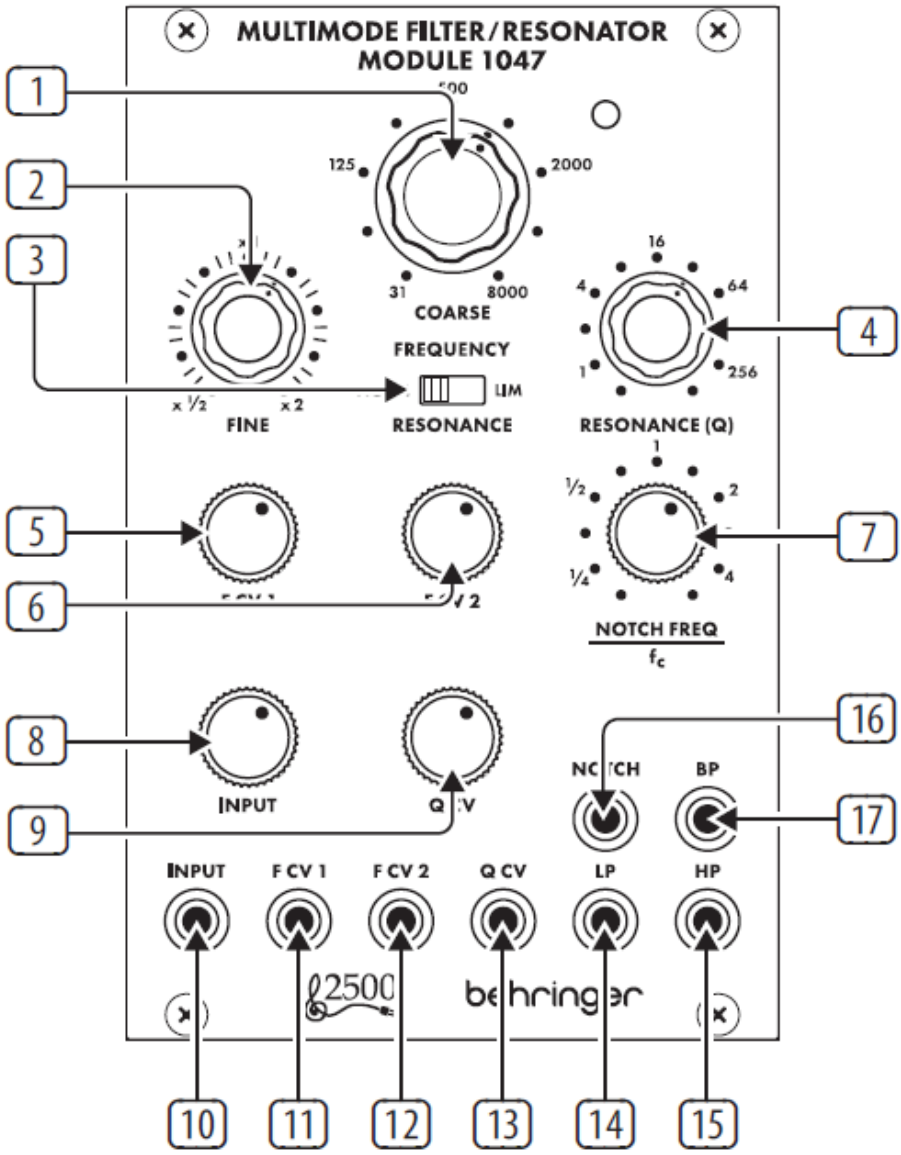
Music Tribe accepts no liability for any loss which may be suffered by any person who relies either wholly or in part upon any description, photograph, or statement contained herein. Technical specifications, appearances and other information are subject to change without notice.

LIMITED WARRANTY

- For the applicable warranty terms and conditions and additional information regarding Music Tribe's Limited Warranty, please see complete details online at community. **musictribe.com/support**.

OVERVIEW

MULTIMODE FILTER / RESONATOR MODULE 1047 Controls



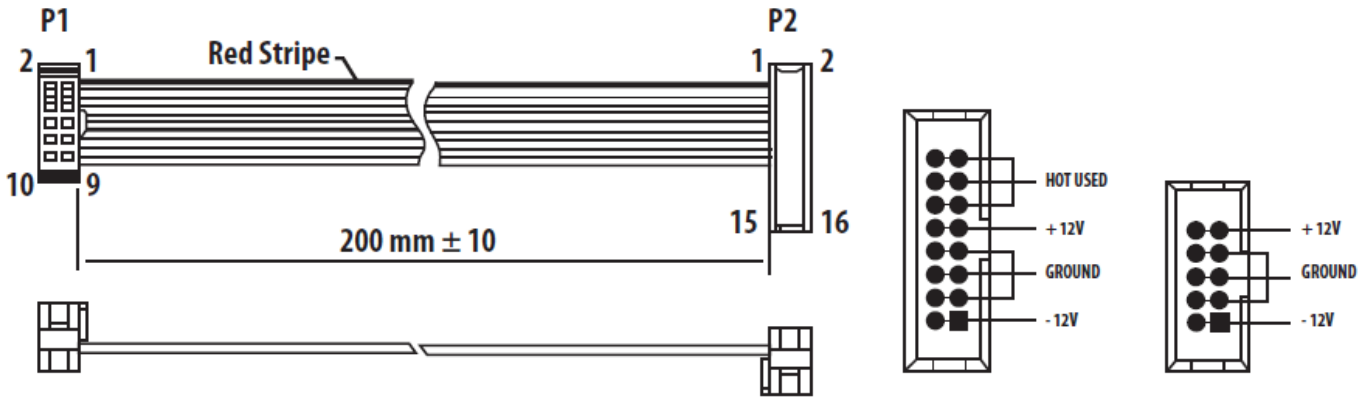
1. **COARSE –** Use this knob to dial in the general frequency area you want for the high-pass threshold, low-pass threshold, band-pass center frequency and notch filter center frequency, then go to the FINE knob to refine the frequency setting. The frequency set by the COARSE and FINE knobs (“fc”) will be used simultaneously for every filter in the module.
2. **FINE –** Use this knob to refine and focus the frequency set by the COARSE FREQUENCY knob.
3. **RESONANCE (NORM/LIM) –** This sliding switch lets you choose between normal resonance mode (NORM) and limiting mode (LIM), which limits the height of a filter’s resonant peak. The LIM setting prevents circuit overload when focusing a filter on a strong harmonic or fundamental frequency, especially at high Q settings on the RESONANCE (Q) knob. In other situations, the LIM setting can result in a very low output signal, and so the NORM setting is usually preferred.
4. **RESONANCE (Q) –** This knob controls the width/ smoothness and narrowness/sharpness of the filter curves. At low Q settings, the filter curves are wider and smoother, with a gentler effect on the sound (except for the notch filter, which functions most effectively at low Q settings). As you increase the Q setting, the filter curves gradually become narrower and sharper, which can help you to focus in on narrow frequency bands. At higher Q settings, the various filters can produce resonant peaks in the filter curves that boost some frequencies and may require moving the RESONANCE (NORM/LIM) switch to the LIM setting to prevent overloading the circuit (or the INPUT attenuator knob can be turned down).
5. **F CV 1 –** This knob adjusts the strength of the control voltage signal coming in through the F CV 1 jack.

6. **F CV 2 –** This knob adjusts the strength of the control voltage signal coming in through the F CV 2 jack.
7. **NOTCH FEQUENCY/fc –** Use this knob to offset the notch filter's center frequency ("fc") set by the COARSE and FINE frequency controls. For standard notch filter behavior, the NOTCH FREQ/fc control should be set to "1" on the scale. This standard setting can then be tweaked by moving the NOTCH FREQ/fc knob very slightly around "1". Also, if higher Q values are added via the RESONANCE knob while the notch filter is offset from fc, the higher Q values result in a resonant peak at fc, with the notch at the point set by the NOTCH FREQ/fc knob.

Knob Setting	**Effect**
Full CCW	Notch filter output becomes a copy of the high-pass output
CCW to 1/4	Notch frequency shifts significantly below fc
CW to 4	Notch frequency shifts significantly above fc
Full CW	Notch filter output becomes a copy of the low-pass filter output

8. **INPUT –** This knob adjusts the strength of the audio signal coming through the INPUT jack.
9. **Q CV –** This knob adjusts the strength of the Q control voltage signal coming in through the Q CV jack.
10. **INPUT –** Use this jack to route audio signals into the module via cables with 3.5 mm connectors. You can also route in a keyboard gate signal to "ring" the filter and produce a unique percussive sound when you press a key.
11. **F CV 1 –** Use this jack to route external control voltage or modulation signals for the filter frequency setting into the module via cables with 3.5 mm connectors.
12. **F CV 2 –** Use this jack to route external control voltage or modulation signals for the filter frequency setting into the module via cables with 3.5 mm connectors.
13. **Q CV –** Use this jack to route external control voltage signals for the RESONANCE (Q) setting into the module via cables with 3.5 mm connectors.
14. **LP –** This jack sends out the final signal from the low-pass filter via cables with 3.5 mm connectors.
15. **HP –** This jack sends out the final signal from the highpass filter via cables with 3.5 mm connectors.
16. **NOTCH –** This jack sends out the final signal from the notch filter via cables with 3.5 mm connectors.
17. **BP –** This jack sends out the final signal from the bandpass filter via cables with 3.5 mm connectors.

Power Connection



Connect end P1 to the module socket
Connect end P2 to the power supply

The MULTIMODE FILTER / RESONATOR MODULE 1047 module comes with the required power cable for connecting to a standard Eurorack power supply system. Follow these steps to connect power to the module. It is easier to make these connections before the module has been mounted into a rack case.

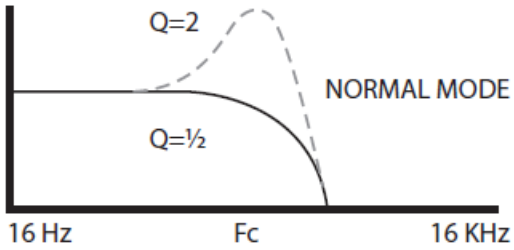
1. Turn the power supply or rack case power off and disconnect the power cable.
2. Insert the 16-pin connector on the power cable into the socket on the power supply or rack case. The connector has a tab that will align with the gap in the socket, so it cannot be inserted incorrectly. If the power supply does not have a keyed socket, be sure to orient pin 1 (-12 V) with the red stripe on the cable.
3. Insert the 10-pin connector into the socket on the back of the module. The connector has a tab that will align with the socket for correct orientation.
4. After both ends of the power cable have been securely attached, you may mount the module in a case and turn on the power supply.

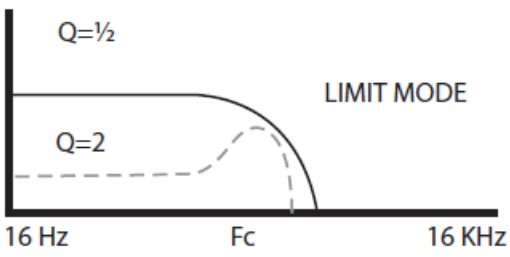
Installation

- The necessary screws are included with the module for mounting in a Eurorack case. Connect the power cable before mounting.
- Depending on the rack case, there may be a series of fixed holes spaced 2 HP apart along the length of the case, or a track that allows individual threaded plates to slide along the length of the case.
- The free-moving threaded plates allow precise positioning of the module, but each plate should be positioned in approximate relation to the mounting holes in your module before attaching the screws.
- Hold the module against the Eurorack rails so that each of the mounting holes are aligned with a threaded rail or threaded plate. Attach the screws part way to start, which will allow small adjustments to the positioning while you get them all aligned. After the final position has been established, tighten the screws down.

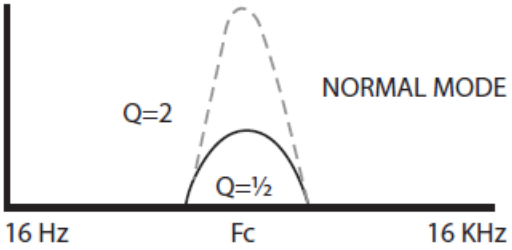
Filter Curves

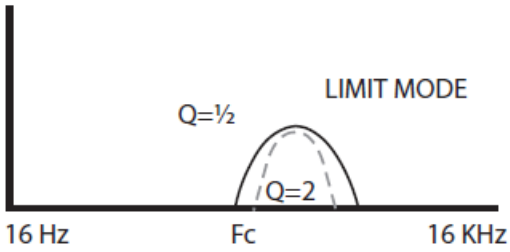
LOWPASS RESPONSE



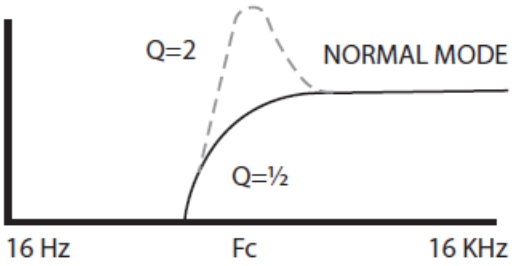


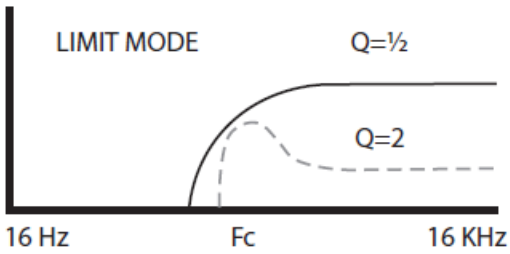
BANDPASS RESPONSE



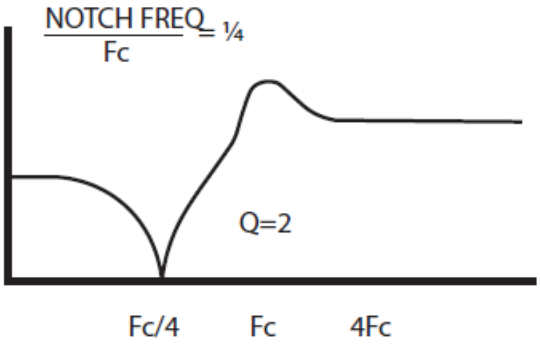


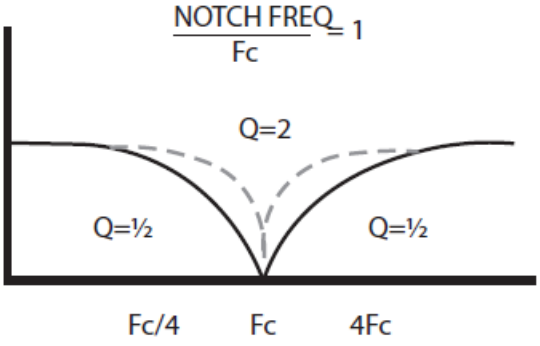
HIGHPASS RESPONSE

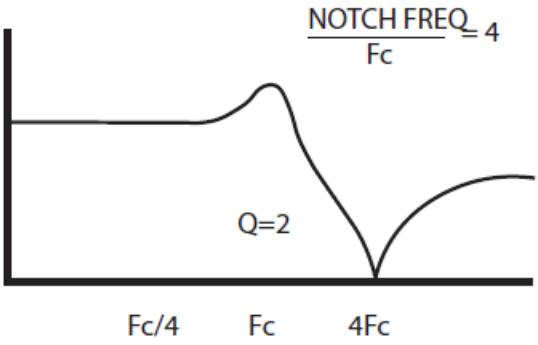




Notch Responses







Specifications

Inputs

Input

Type	1 x 3.5 mm TS jack, DC coupled
Impedance	50 kΩ, unbalanced
Max input level	+18 dBu

Frequency CV input 1

Type	1 x 3.5 mm TS jack, DC coupled
Impedance	50 kΩ, unbalanced
Max input level	±10 V
CV scaling	1 V/oct.

Frequency CV input 2

Type	1 x 3.5 mm TS jack, DC coupled
Impedance	50 kΩ, unbalanced
Max input level	±10 V
CV scaling	1 V/oct.

Q CV input

Type	1 x 3.5 mm TS jack, DC coupled
Impedance	50 kΩ, unbalanced
Max input level	±10 V
CV scaling	1 V doubles the Q factor

Outputs

Filter outputs (LP / HP / BP / Notch)

Type	4 x 3.5 mm TS jack, DC coupled
Impedance	1 kΩ, unbalanced
Max output level	+18 dBu

Controls

Coarse frequency	1 x rotary knob, 31 Hz to 8 kHz
Fine frequency	1 x rotary knob, x1/2 to x2
Resonance (Q)	1 rotary knob, Q = 0.5 to >256
Resonance (Norm / lim)	2-way sliding switch Normal / limiting, switchable
Frequency CV 1 / 2 attenuators	2 x rotary knob, -∞ to unity gain
Q CV attenuator	1 x rotary knob, -∞ to unity gain
Input attenuator	1 x rotary knob, -∞ to unity gain
Notch frequency/fc	1 x rotary knob, ±3 octave range

Power

Power supply	Eurorack
Current draw	55 mA (+12 V), 45 mA (-12 V)

Physical

- **Dimensions** 43 x 81 x 129 mm (1.7 x 3.2 x 5.1″)
- **Rack units** 16 HP
- **Weight** 0.17 kg (0.37 lbs)

FCC STATEMENT

Behringer
MULTIMODE FILTER / RESONATOR MODULE 1047

- **Responsible Party Name:** Music Tribe Commercial NV Inc.
- **Address:** 122 E. 42nd St.1, 8th Floor NY, NY 10168, United States
- **Email Address:** legal@musictribe.com

MULTIMODE FILTER / RESONATOR MODULE 1047

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

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

Important information:

- Changes or modifications to the equipment not expressly approved by Music Tribe can void the user's authority to use the equipment.

CE Hereby, Music Tribe declares that this product is in compliance with Directive 2014/30/EU, Directive 2011/65/EU and Amendment 2015/863/EU, Directive 2012/19/EU, Regulation 519/2012 REACH SVHC and Directive 1907/2006/EC.

- **Full text of EU DoC is available at: https://community.musictribe.com/**
- **EU Representative:** Music Tribe Brands DK A/S
- **Address:** Gammel Strand 44, DK-1202 København K, Denmark
- **UK Representative:** Music Tribe Brands UK Ltd.
- **Address:** 8th Floor, 20 Farringdon Street London EC4A 4AB, United Kingdom

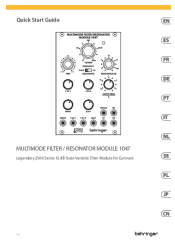
Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law.

This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.

Music Tribe Commercial FZE
Made in China

CAN ICES–003 (B)/NMB–003 (B)

Documents / Resources

	**behringer 1047 Multi Mode Filter Resonator Module** [pdf] User Guide 1047 Multi Mode Filter Resonator Module, 1047, Multi Mode Filter Resonator Module, Filter Resonator Module, Resonator Module, Module

References

- Music Tribe
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- Music Tribe
- User Manual