behringer SYSTEM 35 Modular Synthesizer with 25 Modules User Guide

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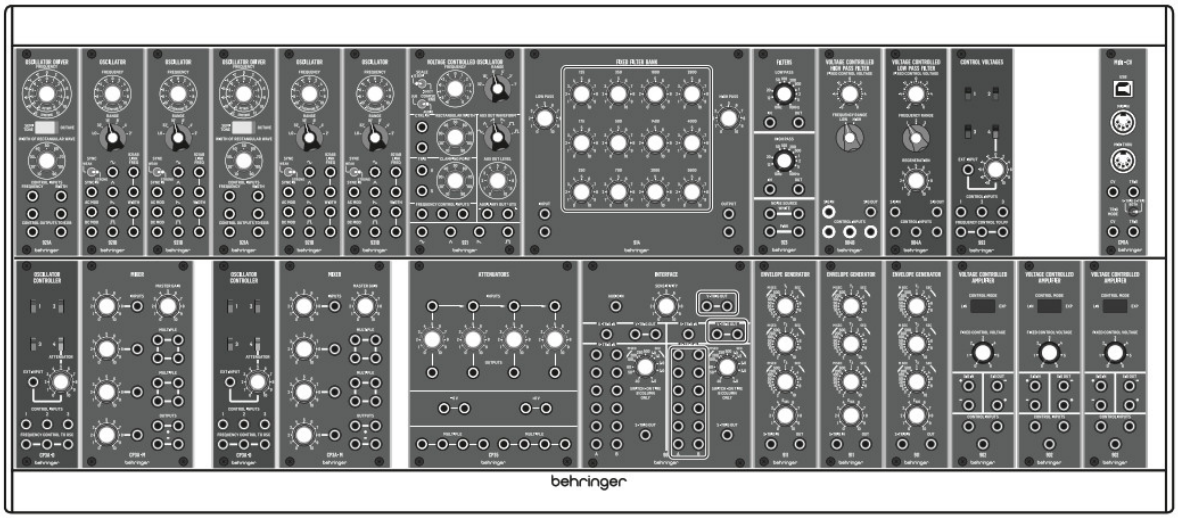
Quick Start Guide



SYSTEM 35

Complete “System 35” Modular Synthesizer with 25 Modules, Midi-to-CV Converter and EURORACK GO case V 1.0

Contents

Important Safety Instructions

CAUTION

 **RISK OF ELECTRIC SHOCK!** 
NO NOT OPEN!

Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock. Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modifications should be performed only by qualified personnel.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure – voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

Caution
To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

Caution
To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Caution
These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including

amplifiers) that produce heat.

9. 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 the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Use only attachments/accessories specified by the manufacturer.

2. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing 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.
15. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

7. 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.

18. Do not install in a confined space, such as a book case or similar unit.
19. Do not place naked flame sources, such as lighted candles, on the apparatus.
20. Please keep the environmental aspects of battery disposal in mind. Batteries must be disposed-of at a battery collection point.
21. This apparatus may be used in tropical and moderate climates up to 45°C.

LEGAL DISCLAIMER

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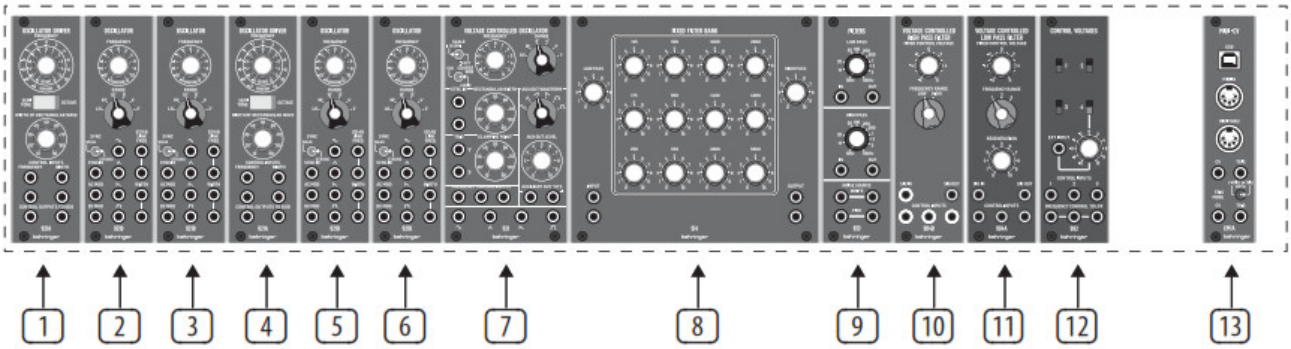
LIMITED WARRANTY

For the applicable warranty terms and conditions and additional information regarding Music Tribe's Limited

Warranty, please see complete details online at musictribe.com/warranty.

Modules

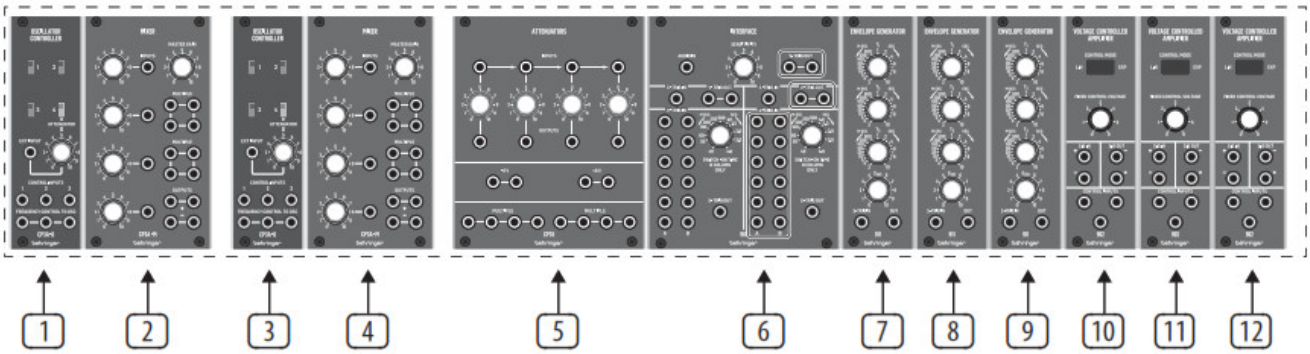
Your System 35 has two rows of modules



Top Row

(1) & (4) 921A Oscillator Driver.
(2) & (3) / (5) & (6) 921B Voltage Controlled Oscillators (VCO).
(7) 921 Voltage Controlled Oscillator (VCO/LFO)
(8) 914 Fixed Filter Bank (FFB).
(9) 923 Filters and Noise Sources.
(10) 904B High Pass Filter (HPF).
(11) 904A Low Pass Filter (LPF).
(12) 992 Control Voltages.
(13) CM1A MIDI interface.

Bottom Row



(1) & (3) CP3A O
(2) & (4) CP3A M
(5) CP35 Attenuator / Voltage Source / Multiple
(6) 961 Interface.
(7) – (9) 911 Envelope Generators (EG).
(10) – (12) 902 Voltage Controlled Amplifiers (VCA).
Further information on all modules can be found on their individual Quick Start Guides at www.behringer.com/downloads.html

System 35 – Getting Started

CONNECTION

To connect the System 35 to your system, please refer to the individual patches.

HARDWARE SETUP

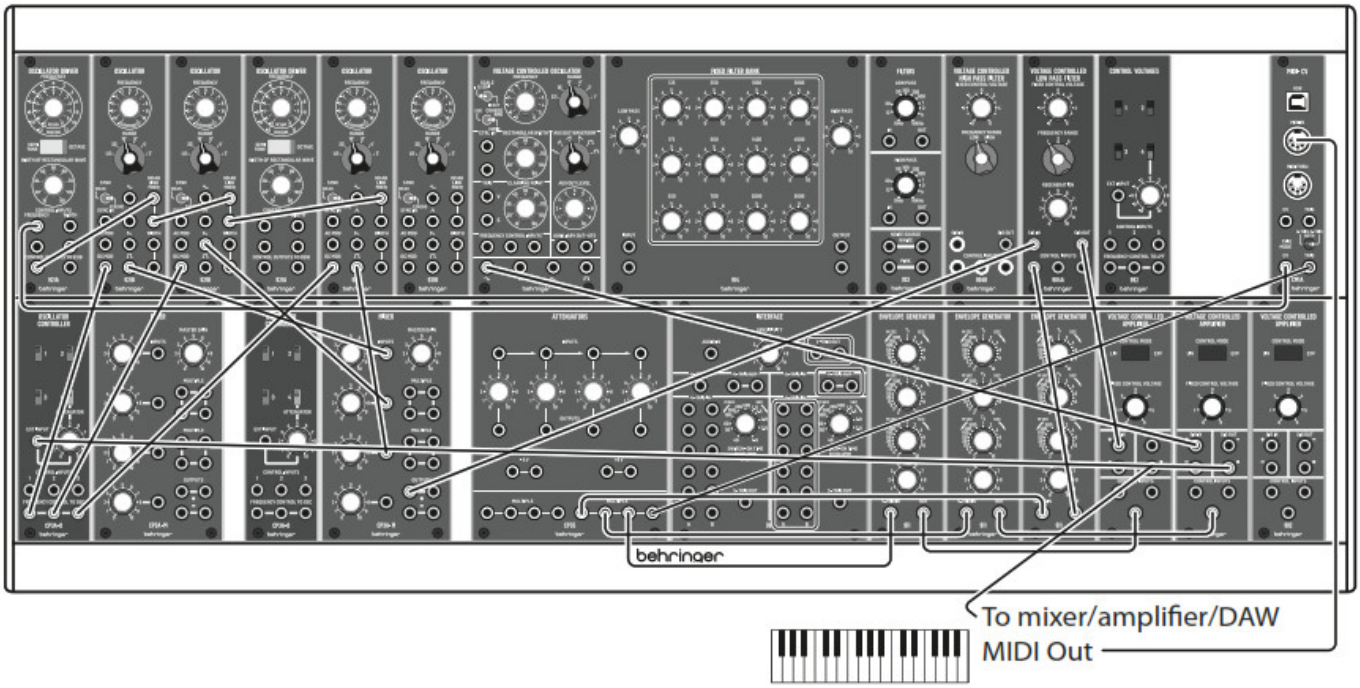
Make all the connections in your system. Keep the System 35 power turned off when making any connections. Ensure your sound system is turned down. Turn on the System 35 before turning on any power amplifiers and turn it off last. This will help prevent any turn on or turn off “pops or thumps” in your speakers.

WARM UP TIME

We recommend leaving 30 minutes or more time for the System 35 to warm up before recording or live performance. (Longer if it has been brought in from the cold.) This will allow the precision circuits time to reach their normal operating temperature and tuned performance.

System 35 Patches

Expressive Lead #1

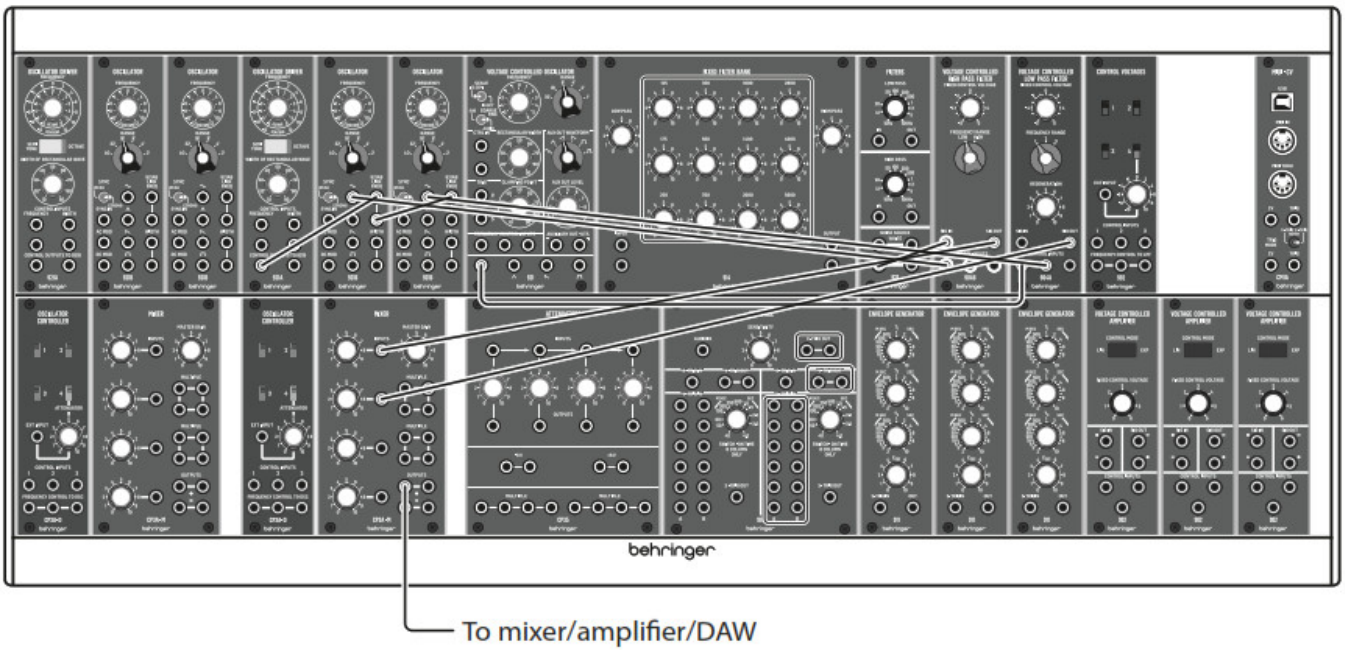


Voltage Control (pitch)

Source	Destination
External MIDI Keyboard – MIDI Out	CM1A MIDI Interface MIDI In
CM1A CV Output	921A Oscillator Controller Frequency Input
921A Frequency Output	921B Frequency Link (in series)
Audio	
921B Waveform outs (three of four)	CP3A-M Inputs
CP3A-M Output	904A Signal Input
904A Signal Output	902 Signal Input
902 Signal Output	Your mixer/amplifier/DAW
Voltage Control (amplitude)	
CM1A s-trigger Output	Multiple
Multiple Output (three of)	3 x 911 s-trigger Input
1st 911 Output	1st 902 Control Input
Voltage Control (modulation)	
2nd 911 Output	904A Control Input
921 Aux Sine Output	2nd 902 Signal Input
2nd 902 Signal Output	CP3A-O Input 4
CP3A-O Outputs	921B DC Mod Input (three of)
3rd 911 Output	2nd 902 Control Input

This patch allows a delayed vibrato effect to fade in when a note is held.
The external keyboard controls the pitch and triggering of notes via the CM1A MIDI Interface. As this can be switched between v-trigger and s-trigger then s-trigger should be selected and the 961 Interface need not be used.
Pitch CV is fed to one of the 921A Oscillator Drivers, which daisy chain to the 921B VCOs. The selected waveform from each VCO is fed to one of the CP3A-M mixers; which then feeds the 904A LPF. S-triggers are fed to a multiple, and then to the 911 EGs' s-trigger inputs
The output of the 904A is fed to one of the 902 VCAs, which feeds out to your mixer, amplifier, or DAW. This VCA is controlled by the first 911 EG. The second 911 feeds the 904A control input. The third 911 EG controls the second 902 VCA.
The second 902 VCA signal input is fed from the 921 LFO. Its output is fed to the fourth input of the C3PA-O so that it can be attenuated if necessary. The C3PA-Os three outputs feed the DC Modulation inputs of the 921 Oscillators
The third 911 should have a long attack time and full sustain.
So long as the first 911 has a long sustain time, when a note is held a vibrato effect will fade in slowly. When notes are played legato there is little or no vibrato

Space Rock

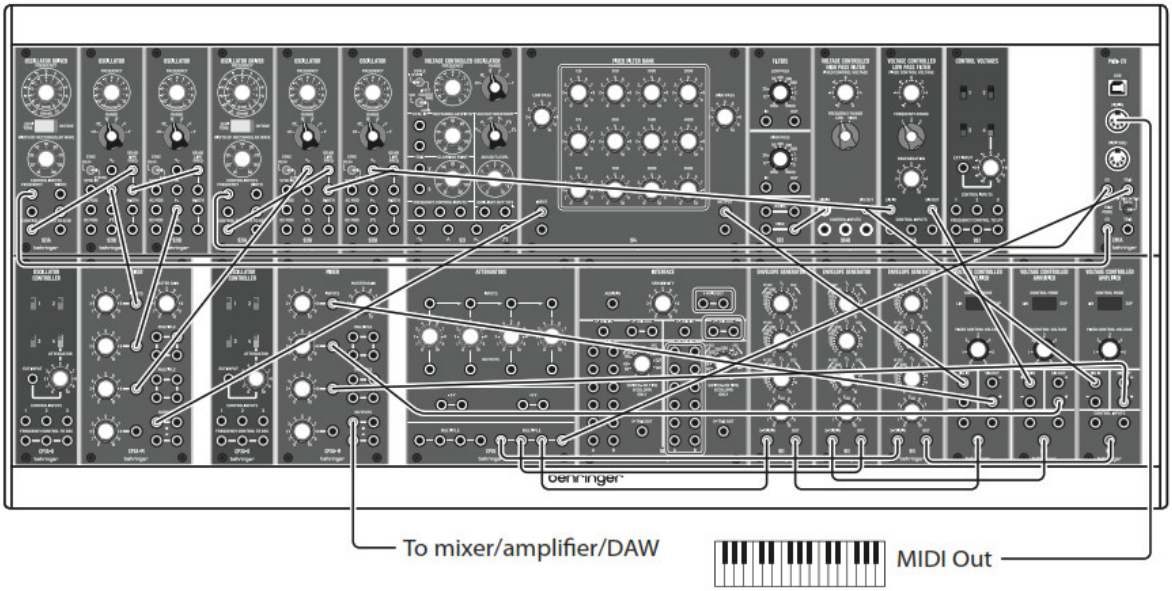


This patch creates two of the classic `space rock' sounds, and allows them to be mixed together.

Source	**Destination**
921 Sine Wave Output	904A Control Input
921A Frequency Output	2 x 921B Frequency Link (in series)
1st 921B Sine Wave Output	904A Control Input
2nd 921B Sine Wave Output	904B Control Input
923 Pink Noise Output	904B Signal Input
904A Signal Output	CP3A-M Input 1
904B Signal Output	CP3A-M Input 2
CP3A-M Output	Your mixer, amplifier, DAW

Control settings are very important for this patch.
Regeneration on the 904A LPF must be set to 9 or 10 to force the filter to self-oscillate
The 921A should have Octave selected and the frequency control set to -6
The 921B VCOs should be set to 'Lo' – these LFOs provide the sweep to the filters
The 921 LFO should be set to 'Sub' – this is the main modulation for the self-oscillating filter, and manual alteration of the Frequency control helps to produce the classic sound.
The pink noise feeding the 904B HPF produces a swept wind effect, that can be altered with the Fixed Control Voltage
Altering the Fixed Control Voltage of the 904A LPF also produces interesting effects
The CP3A-M balances the two signals, as an alternative feed the outputs of the two filters direct to two mixer or amplifier channels. Both sounds benefit from a lot of echo!

Mellow Organ



A mellow sound using the 914 FFB that can easily be changed to something more aggressive by changing the settings

Voltage Control (pitch)

Source	**Destination**
External MIDI Keyboard – MIDI Out	CM1A MIDI Interface MIDI In
CM1A CV Output via Multiple	921A Frequency Input x 2
921A Frequency Output x 2	921B Oscillator Frequency Link (in series)
Audio	
1st 921B Triangle Output	CP3A-M Input 1
2nd 921B Square Output	CP3A-M Input 2
3rd 921B Sine Output	CP3A-M Input 3
CP3A-M Output	914 Input
4th 921B Sine Output	904A Signal Input
923 Pink Noise Output	904B Signal Input
914 Output	1st 902 Signal Input
904A Signal Output	2nd 902 Signal Input
904B High Pass Filter Signal Output	3rd 902 Signal Input
3 x 902 Signal Output	CP3A-M Mixer Inputs 1-3
CPO3A-M Mixer Output	Your Mixer/Amplifier/DAW
Voltage Control (Amplitude)	
CM1A s-trigger Output	3 x 911 via Multiple
3 x 911 Output	3 x 902 Control Input

There are three components to this sound. The main organ sound is generated by the first three 921Bs and the 914 FFB. The second comes from the fourth 921B and the 904A LPF and the third from the 923 Pink Noise and the 904B HPF. Certain settings are important, but variations can easily be achieved.

The main organ sound mixes Triangle, Square and Sine waves from three 921Bs. The width control on the 921A would normally be at 50%, giving a pure Square Wave, but can be made more `nasal' by increasing this or more mellow by decreasing. The basic sound has all waveforms at equal volume, but new sounds can be created by altering the balance.

The settings of the 914 are also important. For the basic sound they should be:

Low Pass	0
125	4
175	4
250	0
350	5
500	3.5
700	0
1000	0
1400	1
2000	0
2800	0
4000	0
5600	0
High Pass	0

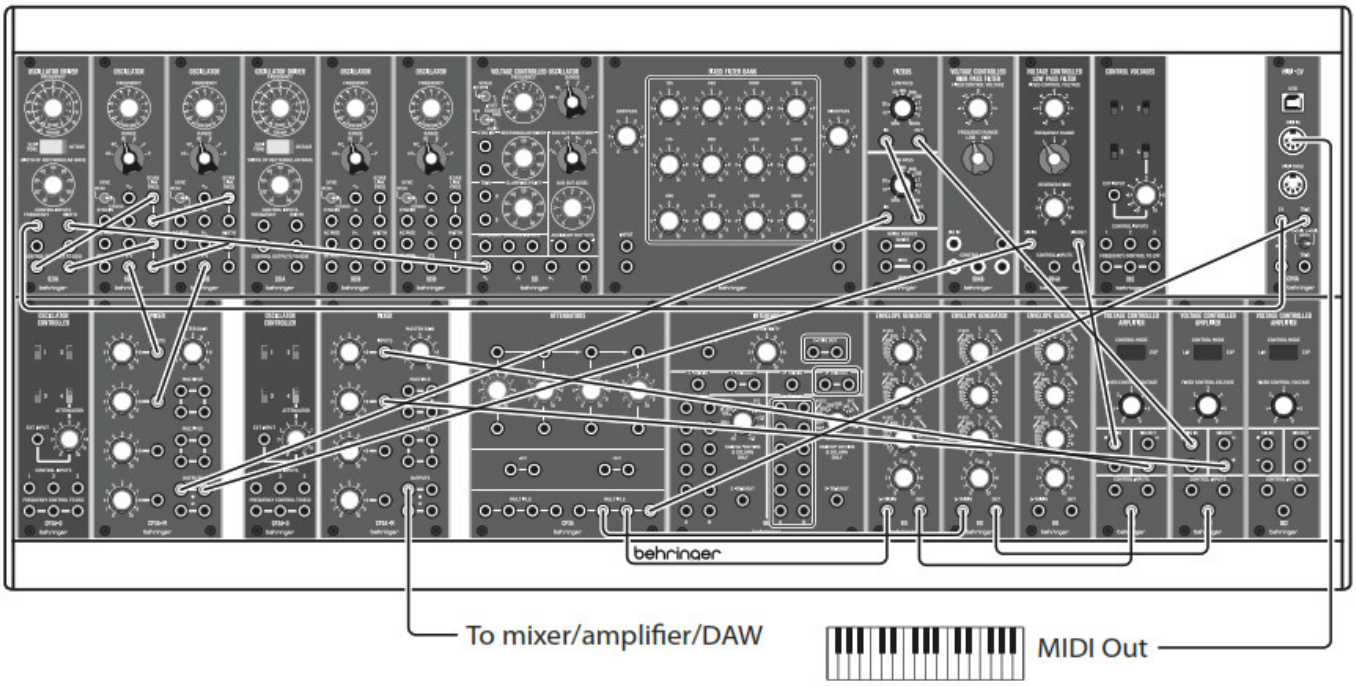
Experiment with different values adding in higher frequencies makes the sound more aggressive, for example.

The 911 EG should have minimum T1 (attack) and T3 (release); long T2 (decay) and E sus(tain)

The second element is a tuned percussive sound on key press. This is derived from the sine wave of the fourth 921B and the 904A LPF. The envelope settings are minimum T1 (attack) and T3 (release) and E sus(tain); 500ms T2 (decay)

The third element is the untuned percussive sound on key press. This is derived from the pink noise of the 923 and the 904B HPF. Envelope settings are minimum T1 (attack) and T3 (release) and E sus(tain); 5ms T2 (decay) . This element should be kept down in the mix

Expressive Lead #2



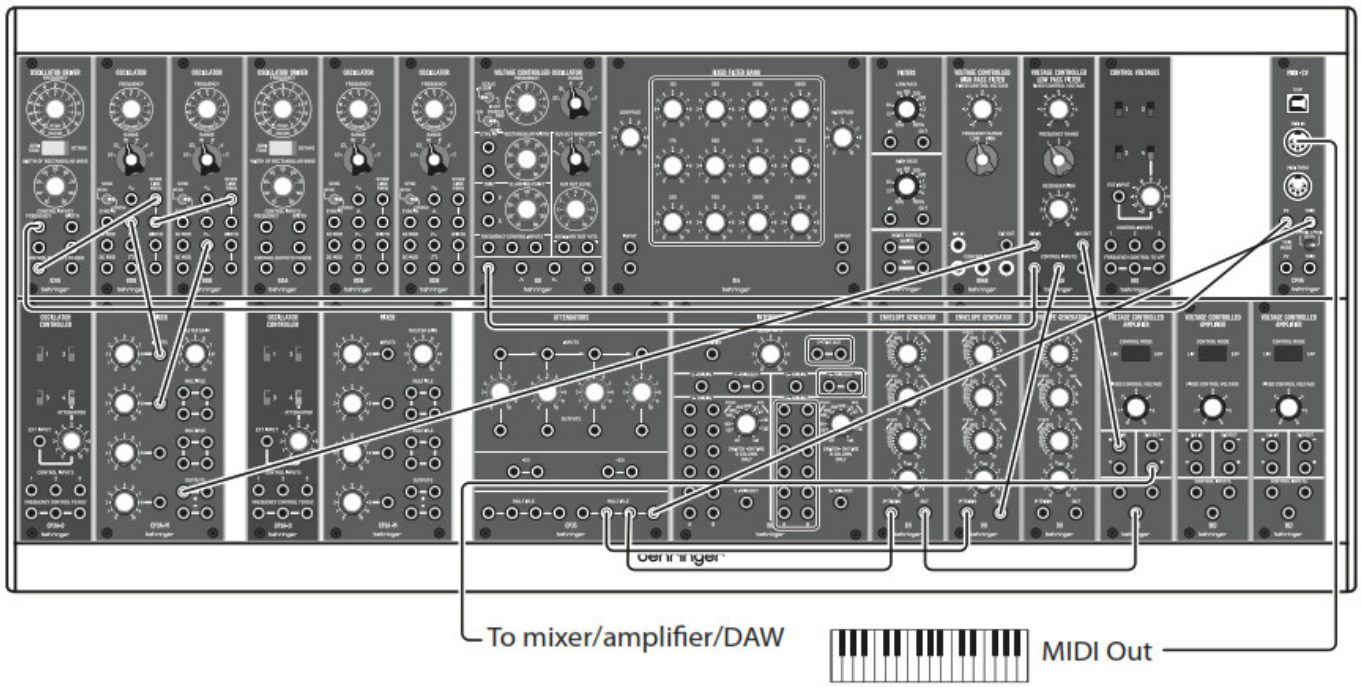
This sound uses Pulse Width Modulation to a pair of oscillators, one of which should be slightly detuned to fatten the sound.

Voltage Control (pitch)

Source	**Destination**
External MIDI Keyboard – MIDI Out	CM1A MIDI Interface MIDI In
CM1A CV Output via Multiple	921A Oscillator Controller Frequency Input
921A Frequency Output	2 x 921B Frequency Link (in series)
Audio	
2 x 921B Square Wave Output	CP3A-M Inputs 1 & 2
CP3AM Output via Multiple	904A Signal In and 923 High Pass Signal Input
923 High Pass Signal Output	923 Low Pass Signal Input
904A Signal Output	1st 902 Signal Input
923 Low Pass Output	2nd 902 Signal Input
2 x 902 Signal Output	2nd CP3A-M Mixer Inputs 1 & 2
2nd CP3A-M Output	Your Mixer/Amplifier/DAW
Voltage Control (Amplitude)	
CM1A s-trigger Out via Multiple	2 x 911 s-trigger Input
2 x 911 Output	2 x 902 Control Input
Voltage Control (Modulation)	
921 sine wave Output	921A Width Input
921A Width Link	2 x 921B Width Link (in series)

The detuned 921B VCOs give a fat sound, whose timbre changes constantly at the speed of the 921 sine wave – the 921 should be in Sub mode, speed can be adjusted to suit.
The main part of the sound comes from the 904A LPF, whose Fixed Control Voltage and Regeneration can be set to whatever suits your aim. The second part of the sound is a bandpass effect from the 923 Filters.
911 EG settings can be adjusted to suit for the main part of the sound, although medium to high levels on T2 (decay), T3 (release), and E sus(tain) are recommended.
The second part of the sound should have a short T2 (decay) and minimal T3 (release) and E sus(tain).
The second part of the sound should be lower in the final mix

Percussive Lead



A simple, two oscillator lead sound with a hard front end and timbral development which is also suitable for melodic sequencing

Voltage Control (pitch)

Source	Destination
External MIDI Keyboard – MIDI Out	CM1A MIDI Interface MIDI Input
CM1A CV Output via Multiple	921A Frequency Input
921A Frequency Output	921B Frequency Link (in series)
Audio	
1st 921B Triangle wave Output	CP3A-M mixer Input 1
2nd 921B Sawtooth wave Output	CP3A-M mixer Input 2
CP3A-M Output	904A Signal Input
904A Signal Output	902 Signal Input
902 Signal Output	Your Mixer/Amplifier/DAW
Voltage Control (Amplitude)	
CM1A s-trigger Output via Multiple	2 x 911 s-trigger Input
1st 911 Output	902 Control Input
Voltage Control (Modulation)	
921 Sine Wave Output	904A Control Input
2nd 911 Output	904A Control Input

This sound uses two 921B VCOs, with different waveforms, and sounds best if one is slightly detuned. They both feed the 904A LPF, and their relative levels can be adjusted with the CP3A-M mixer as required. The 904A's output is fed to a 902 VCA, whose amplitude is controlled by the 1st 911 EG

To obtain the percussive edge the first 911's settings should be T1 (attack) 2ms, T2 (decay) 200ms, T3 (release) 200ms, E sus(tain) 4 seconds

The 904A is modulated by a slow sine wave from the 921 LFO and by the 2nd 911 EG, which should have settings around T1 (attack) 1 second, T2 *(decay) 50ms, T3 (release) 4 seconds, E sus(tain) 9

Other important information

1. **Register online.**
   Please register your new Music Tribe equipment right after you purchase it by visiting musictribe.com. Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.
2. **Malfunction.**
   Should your Music Tribe Authorized Reseller not be located in your vicinity, you may contact the Music Tribe Authorized Fulfiller for your country listed under "Support" at musictribe.com. Should your country not be listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at musictribe.com. Alternatively, please submit an online warranty claim at musictribe.com BEFORE returning the product.
3. **Power Connections.**

Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.

FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION

Behringer
SYSTEM 35

Responsible Party Name: **Music Tribe Commercial NV Inc.**
Address: **5270 Procyon Street, Las Vegas NV 89118, United States**
Phone Number: **+1 702 800 8290**

SYSTEM 35
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 device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(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.

Hereby, Music Tribe declares that this product is in compliance with Directive 2014/35/EU,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 BrandsDK A/S
Address: Ib Spang Olsens Gade 17, DK – 8200 Aarhus N, Denmark

We Hear You

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Documents / Resources

	behringer SYSTEM 35 Modular Synthesizer with 25 Modules [pdf] User Guide SYSTEM 35, Modular Synthesizer with 25 Modules Midi-to-CV Converter and EURORACK GO case

References

- Music Tribe
- Behringer | Downloads
- Music Tribe