User Manual

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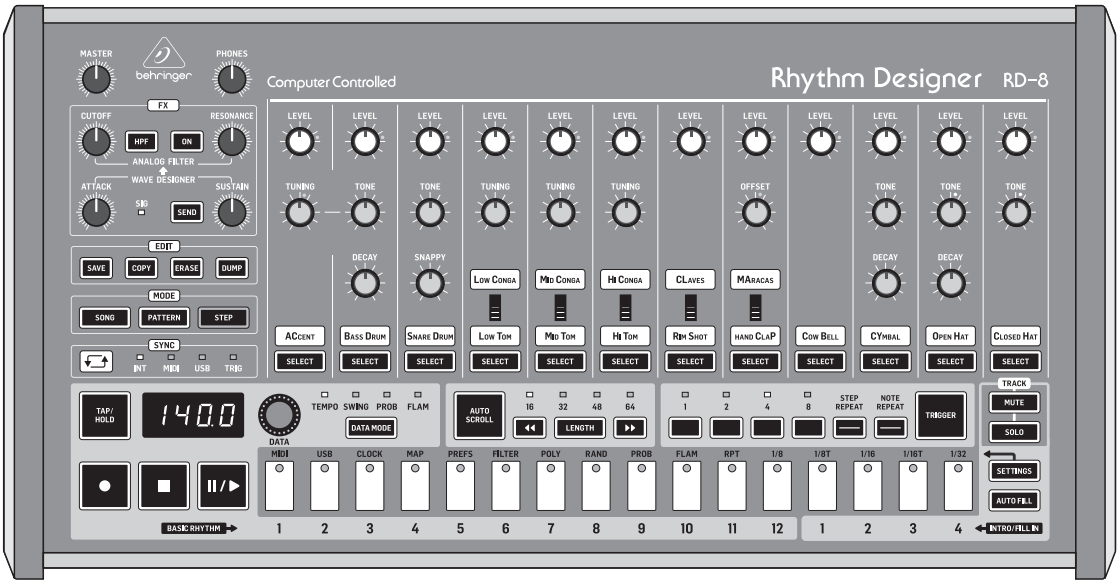

RHYTHM DESIGNER RD-8

Classic Analog Drum Machine with 16 Drum Sounds, 64 Step Sequencer, Wave Designer and Dual-Mode Filter

behringer

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Table of Contents

Thank you 2
Important Safety Instructions 3
Legal Disclaimer 3
Limited warranty 3
1. Introduction 4
2. Features 5
3. Front and Rear Panel Control Layout 5
4. Overview 8
5. Creating a Pattern (Step Mode) 9
6. Playing a Pattern (Pattern Mode) 11
7. Creating a Song (Pattern Chaining Mode) 11
8. Creating a Song Chain (Song Mode) 12
9. Wave Designer 12
10. Analog Filter 13
11. Settings 14
12. Software Updates 17
13. Parameters 18
14. New Features Overview 22
15. RD-8 Set-up Example 24
16. Specifications 26
17. Glossary 27

Thank you

Thank you very much for expressing your confidence in Behringer by purchasing the RD-8 Rhythm Designer with 16 original drum sounds, 64-step sequencer, integrated Wave Designer, integrated dual-mode filter, 11 independent analog outputs plus a mono mix, 16 authentic step pads, 16 pattern changes per song and an easily readable 7-segment 4-character LED display for tempo.

EN Important Safety Instructions

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 modification 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.

12. 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.

17. 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.

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About the RD-8

- Authentic recreation of the influential and highly sought after legendary analog drum machine
- 16 original drum sounds with additional parameters and global Accent capability
- Modern and versatile workflow provides enhanced playability, enabling you to create captivating live performances
- Powerful 64-step drum sequencer supports poly-meter, step-repeat, note-repeat, Real-Time Triggering, track-mute and track-solo
- Integrated FX bus features Wave Designer and dual-mode Analog Filter with per voice assignment
- Live recording, editing and playback of Analog Filter cutoff via automation
- Storage of up to 16 songs and 256 patterns, all of which can be imported/exported during playback for unlimited songs and patterns
- Pattern Mode allows arrangement of patterns into full songs and setting number of repeats per song part
- Song Mode allows chaining songs together for live sets and expanded compositions
- Unique Auto Scroll feature enables improvisation in all modes
- Comprehensive MIDI In/Out/Thru and USB implementation for synchronization and connection to external devices
- Sync options include USB, MIDI, Clock and Internal for maximum versatility
- 11 independent analog outputs for external processing or recording your rhythms as multi-track audio
- Powerful headphone and main outputs with ¼ (6.35 mm) connectors
- High-visibility LED display makes it easy to verify program parameters
- Robust encoder for editing parameters such as Tempo, Swing, Probability, Flam and Random
- 16 authentic-style step buttons with bold LED indicators for easy pattern creation
- 3-Year Warranty Program*
- Designed and engineered in the U.K.

*Warranty details can be found at www.musictribe.com

1. Introduction

An ultra-affordable leap into the warm world of analog drum beats, the Behringer RD-8 gives you the power to create fascinating rhythms with incredible power and ease. The RD-8's pure analog signal uses legendary analog circuits with some additional pots for more parameters.

The RD-8 is ideal for the studio and/or the road. Owning an RD-8 gives you all the power of a classic drum machine in a flexible package with the ability to create bewildering beats.

1.1 Before you get started

The RD-8 was carefully packed in the factory to guarantee safe transport. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage that may have occurred during transit. If the unit is damaged, please do NOT return it to us, but notify your dealer and the shipping company immediately, otherwise claims for damage or replacement may not be granted.

1.1.1 Initial operation

Be sure that there is enough space around the unit for cooling purposes and, to avoid over-heating, please do not place the RD-8 on high temperature devices such as radiators or power amps.

WARNING: The RD-8 is supplied with a DC power adapter that meets the required safety standards. Do not use any other power adapter.

WARNING: Please make sure that all units have a proper ground connection. For your own safety, never remove or disable the ground conductor from any units.

1.2 The product manual

This product manual is designed to give you both an overview of the RD-8, as well as detailed information on each of the controls and parameters. This manual is based on software version **V2.1.2**. Further features and updates will be added later so please regularly check for software updates using the SYNTHTRIBE App. You will find an overview of the physical control elements in the next chapter.

1.3 Preparation

CAUTION: Remember to turn your monitors/loudspeakers on last when powering up your system. Turn your monitors/loudspeakers off first when powering down your system.

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2. Features

A Past Masterpiece Rejuvenated

Great care has been taken in designing the RD-8 to achieve new possibilities in beat creation by reviving a timeless analog design from one of the best classic drum machines of yesteryear. By creating a fresh modern take on a characteristic drum machine, the RD-8 gives you the power to harness the phenomenal sound of the original. Colossal bass drums through to sizzling hi-hats can be manipulated to take your rhythm conception to the next level. This is no digital clone, it's an analog beat making monster.

Powerful and Feature Rich Sequencer

The RD-8 features what we believe to be one of the most powerful step sequencers ever created. Improved workflows increase productivity making complex song creation simple. The 64-step sequencer with storage of up to 256 patterns and 16 songs allows complicated song arrangements.

A Design for Life

Designed for life and live performance, including all new features for live use in each of the sequencer modes: Step Repeat, Note Repeat, Real-Time Triggering and live Step-Overdubbing. Enable recording in Pattern Launch Mode to build up song structures on the fly, switch back to Manual Mode at the touch of a button, and then use Autofill to introduce more variations. Cue up another song from memory, without interrupting playback, so you can literally perform entire sets straight from the one machine.

Advanced Dual-Mode Filter

To add new possibilities to the RD-8 it has a highly-flexible 12 dB filter, which lets you freely experiment with the cutoff frequency and resonance to create out-of-this-world beats. RD-8's HPF button toggles between LPF (lo-pass filter) and HPF (hi-pass filter). Fluid sweeps of the filter's CUTOFF knob can be recorded straight into the sequencer and can be further tweaked in the Step Editor.

Wave Shaping Goodness

The integrated Wave Designer has individual ATTACK and SUSTAIN controls for adding another dimension to drum beats. Sounds can be controlled in new ways to provide exciting new tones.

Polymeter Mode

RD-8 gives you the power to control loops in new ways with the Loop Overlay function, which generates continual variations and Polymetric to add spice to your beats. With the Loop Overlay function, you can set different sequence lengths for each of the drum tracks independently to create complex overlapping rhythms and make your song structures really evolve.

Parameter Chaining

Set separate chain preferences for each of your parameters, allowing them to persist globally or to switch on song or pattern changes. Parameters include Tempo, Swing, Flam, Probability, independent track mutes/solos, FX bus assignments, Filter Modes and sweeps for enhanced real-time control. Patterns can be changed on the fly for further creative control when using the RD-8 as the heart of your live setup.

Creative Auto Fill

The auto fill function lets you make on the fly changes and gives that extra touch to your compositions by adding fills at any point in a song. This gives the RD-8 a musical edge when it comes to bringing songs to life.

USB Control

To bring the RD-8 into the modern world USB has been added for sync and midi triggering. The RD-8 can be controlled by a DAW if required. Songs and patterns exchanged, or individual sounds triggered by the DAW sequencer.

Trigger Happy Controls and Connectivity

The RD-8 has 29 knobs, 5 switches and 59 buttons, all laid out in a highly-intuitive format that puts the fun back into your drum beat creation. Input and output connections include: audio input/output, MIDI input, output and thru over USB and 5 pin MIDI din ports. With 3 trigger outs the RD-8 lets you control external synths and hardware sequencers to create songs without a digital audio workstation (DAW) in sight. Full live performances can be made using these extra outputs by controlling other units. The RD-8 can also send and receive clock information with highly accurate timing to sync it to the outside world.

You are covered

We always strive to provide the best possible customer experience. Our products are made in our own Music Tribe factory using state-of-the-art automation, enhanced production workflows and quality assurance labs with the most sophisticated test equipment available in the world. As a result, we have one of the lowest product failure rates in the industry, and we confidently back it up with a generous warranty program.

3. Front and Rear Panel Control Layout

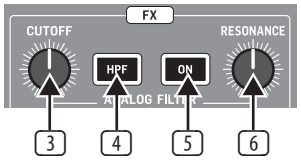
3.1 Top Controls

3.1.1 Volume Section

1 **MASTER** – Controls the main output level.

2 **PHONES** – Adjusts the headphones level. **NOTE: The headphones signal is taken before the Wave Designer and Filter for monitoring purposes. This means the Wave Designer and Filter are not audible in the headphones.**

3.1.2 Analog Filter Section



3 **CUTOFF** – Adjusts the cutoff frequency of the filter.

4 **HPF** – Toggle the filter between HPF (hi-pass filter) and LPF (lo-pass filter, default).

5 **ON** – Engages the filter into circuit when illuminated.

6 **RESONANCE** – Adjusts the resonance of the filter. This emphasizes the frequencies around the cutoff point.

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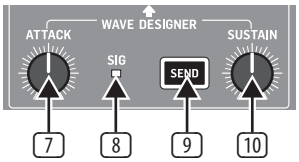
3.1.3 Wave Designer



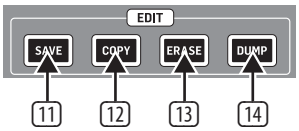
7 **ATTACK** – Controls the attack portion of the Wave Designer circuit. Turn counter clockwise (CCW) to reduce the attack portion of the signal and clockwise (CW) to enhance the attack portion of the selected signal.

8 **SIG** – Shows that signal is present in the Wave Designer circuit.

9 **SEND** – Activates the Wave Designer assignment menu. The button is illuminated when one or more voices are assigned to this bus.

10 **SUSTAIN** – Controls the sustain portion of the Wave Designer circuit. Turn CCW to reduce the sustain portion of the signal and turn CW to lengthen the sustain.

3.1.4 Edit Section



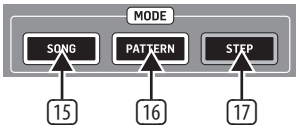
11 **SAVE** – Save a song or pattern to a memory slot.

12 **COPY** – Copy pattern from one location to another memory location.

13 **ERASE** – Delete the selected song, pattern or settings.

14 **DUMP** – Performs a MIDI SysEx Dump of pattern, song or settings.

3.1.5 Mode Section

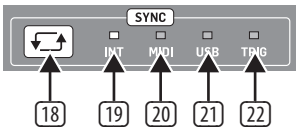


15 **SONG** – Enter Song Mode. Cue 1 of 16 songs.

16 **PATTERN** – Enter Pattern Mode. Use the 16 available patterns to build your song.

17 **STEP** – Shows each available step for the selected voice (up to 64 steps per pattern).

3.1.6 Sync Section



18 **CYCLE** – Cycles through the various SYNC options when the sequencer is stopped. Internal, MIDI, USB or TRIG (External Clock) options.

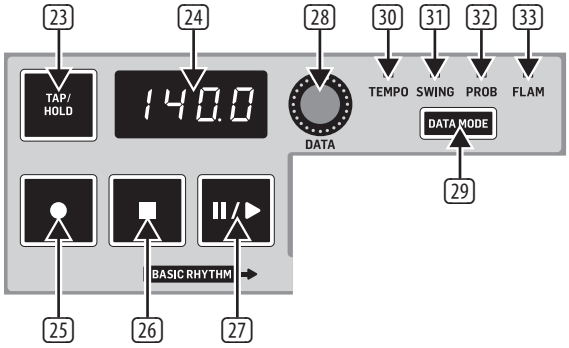
19 **INTERNAL** – The unit is the sync master.

20 **MIDI** – Sync is taken from MIDI in port.

21 **USB –** Sync is taken from the USB port.

22 **TRIG** – Sync is taken from the External Clock input.

3.1.7 Playback Controls



23 **TAP/HOLD** – Set the tempo of the unit with 5 taps. Hold for quick macro control.

24 **DISPLAY** – Multi function 4-character display.

25 **RECORD** – Enable/disable record mode.

26 **STOP** – Stops the currently playing song or pattern.

27 **PLAY/PAUSE** – Play or pause the current song or pattern.

28 **DATA** – Encoder for data editing.

29 **DATA MODE** – Cycles through the various Data Modes. Tempo, Swing, Probability and Flam.

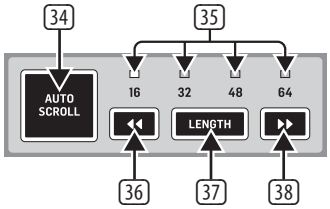
30 **TEMPO** – Adjust the Tempo parameter when selected with the DATA encoder.

31 **SWING** – Adjust the Swing parameter or shuffle feeling when selected with the DATA encoder (25% negative swing to 50% straight then on to 75% full swing).

32 **PROB** – Adjust the probability factor of steps triggering.

33 **FLAM** – Adjust the FLAM width.

3.1.8 Auto Scroll Section



34 **AUTO SCROLL** – Step Mode: Keep Playhead visible. Pattern Mode: Advance song when loop expires. If Auto Scroll is enabled for a pattern that has more than 16 steps, when the Playhead advances beyond a 16-step boundary, the steps will automatically switch pages to stay in sync with the Playhead.

35 **BANKS 16/32/48/64** – White shows bank position of Playhead in current pattern. Red shows currently-viewed bank position.

36 **<< (POSITION MOVE LEFT)** - Step Mode: Choose viewed bank position. Pattern Mode: Choose Playhead position within selected song.

37 **LENGTH** – Step mode: Set the length of the selected pattern. Pattern Mode: Set number of repeats for selected part within the song.

38 **>> (POSITION MOVE RIGHT)** - Step Mode: Choose viewed bank position. Pattern Mode: Choose Playhead position within selected song.

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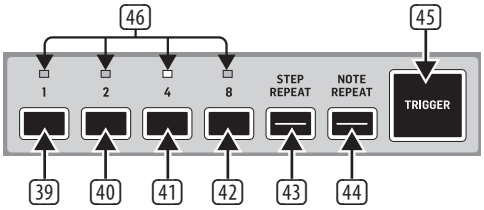
3.1.9 Step & Note Repeat Section



39 **1** – Step or Note repeat of a value of 1.

40 **2** – Step or Note repeat of a value of 2.

41 **4** – Step or Note repeat of a value of 4.

42 **8** – Step or Note repeat of a value of 8.

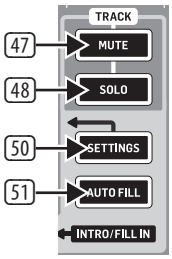
43 **STEP REPEAT** – Repeats the step by the selected value.

44 **NOTE REPEAT** – Repeats the note played with the trigger button by the selected value.

45 **TRIGGER** – Trigger repeats when engaged.

46 **1/2/4/8** – Indication of number of repeats selected.

3.1.10 Track Control and Settings



47 **MUTE** – Activates mute menu.

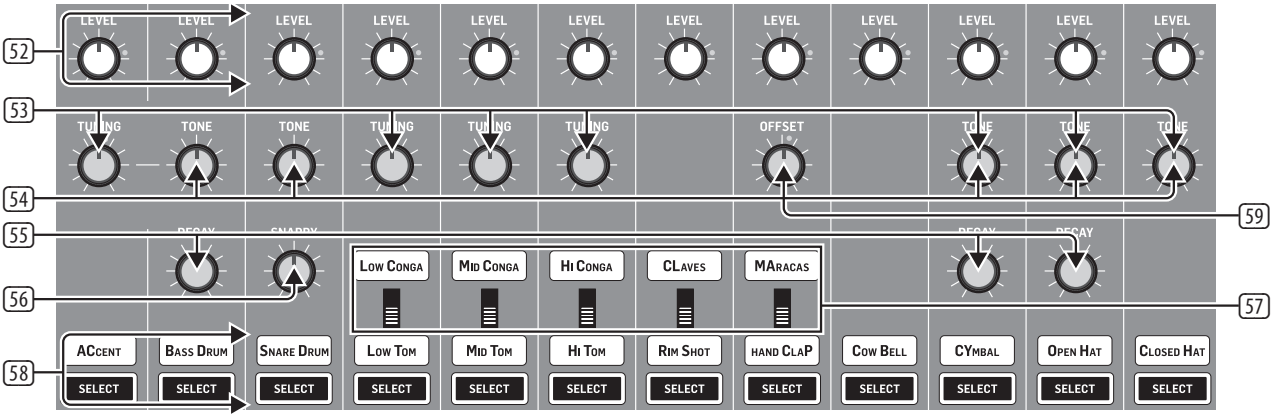
48 **SOLO** – Activates solo menu.

49 **STEP BUTTONS** – Used to input step information into patterns and is also used for various system tasks when used in conjunction with the (50) SETTINGS button or for deeper editing.

50 **SETTINGS** – Used in combination with the (49) STEP BUTTONS to select different operational modes.

51 **AUTOFILL** – Select and add a fill pattern.

3.1.11 Voice Control



52 **LEVEL** – Level of the 11 voices, plus Accent.

53 **TUNING** – Relative tuning of associated voice.

54 **TONE** – Applies a filter to the voice reducing the high frequencies as you turn CCW.

55 **DECAY** – Changes the decay time of the voice. Turn CCW for shorter, CW for longer.

56 **SNAPPY** – Adjust the amount of snap sound to the snare sound. Turning CW increases snap.

57 **VOICE SWITCH** – Switch between the two voices available.

58 **VOICE SELECT** – Selects the voice for editing patterns, Wave Designer, soloing or mute.

59 **OFFSET** – Changes the length of the Hand Clap sound.

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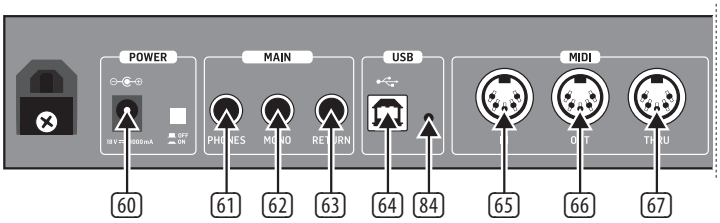
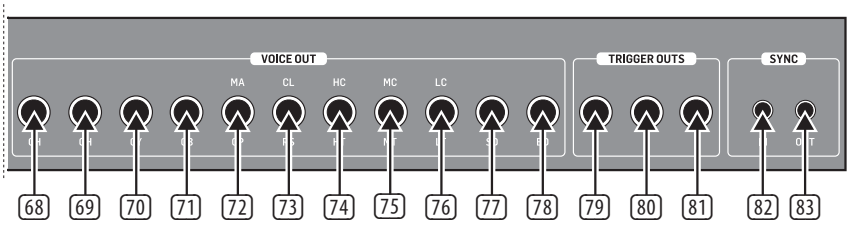
3.2 Rear Panel connections





60 **POWER** – Connect the supplied PSU here and engage power switch to turn on.

61 **PHONES** - Connect headphones via a ¼ (6.35 mm) TRS connector.

62 **MONO** – Main output via a ¼ (6.35 mm) TRS connector.

63 **RETURN** – Sums audio post filter bus. ¼ (6.35 mm) Unbalanced connector.

64 **USB** – Connect to a computer for updates and DAW control.

65 **MIDI IN** – To input MIDI from an external MIDI device such as a sequencer or DAW.

66 **MIDI OUT** – Output of MIDI data to an external MIDI device.

67 **MIDI THRU** – A direct output of the MIDI in to chain to other devices.

68 **CH INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Closed Hat.

69 **OH INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Open Hat.

70 **CY INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Cymbal.

71 **CB INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Cow Bell.

72 **CP/MA INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Hand Clap or Maracas.

73 **RS/CL INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Rim Shot or Claves.

74 **HT/HC INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the High Tom or High Conga.

75 **MT/MC INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Mid Tom or Mid Conga.

76 **LT/LC INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Low Tom or Low Conga.

77 **SD INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Snare Drum.

78 **BD INDIVIDUAL OUTPUT** – ¼ (6.35 mm) Unbalanced output of the Bass Drum.

79 **TRIGGER OUT 1** – +5 v 1ms pulse to trigger external devices. ¼ (6.35 mm) unbalanced output.

80 **TRIGGER OUT 2** – +5 v 1ms pulse to trigger external devices. ¼ (6.35 mm) unbalanced output.

81 **TRIGGER OUT 3** – +5 v 1ms pulse to trigger external devices. ¼ (6.35 mm) unbalanced output. Fixed to Accent.

82 **SYNC IN** – SYNC to external device transmitting clock information using a 1/8 (3.5 mm) TRS jack. Start/stop signal on ring and clock on tip.

83 **SYNC OUT** – SYNC external devices to the Rhythm Designer using an unbalanced ⅛ (3.5 mm) jack.

84 **BOOT** – Enter DFU boot mode for software updates.

4. Overview

This overview will help you set up the RD-8 analog rhythm designer and briefly introduce its capabilities.

4.1 Connections

The RD-8 has a ¼ (6.35 mm) mono jack output on the rear of the unit plus 11 independent voice ¼ (6.35 mm) jacks. When the individual voice outputs are used and connected, they cut that voice from the MAIN MONO output. This is useful for adding effects or external processing to individual sounds.

Audio return is via the ¼ (6.35 mm) mono RETURN jack on the rear panel. This input can be used to process an individual voice or voices via external processing (mixer, compressor or reverb, etc.), then return the signal back into the main output of the RD-8. Please consult the connection set-up guide for examples (8.1).

The CLOCK IN/OUT connections use ⅛ (3.5mm) TRS jacks.

CAUTION: Do not overload the ⅛ (3.5 mm) CLOCK IN input. This jack can only accept voltages up to a maximum of +15 V. The 3.5 mm CLOCK OUT outputs should only be connected to inputs capable of receiving the output voltages. Failure to follow these instructions may damage the RD-8 or external units.

4.2 Software Setup

The RD-8 is a USB Class Compliant MIDI device, and so no driver installation is required. The RD-8 does not require any additional drivers to work with Windows and MacOS. The SYNTHTRIBE App is available which can be used to update and control many features of the RD-8.

4.3 Hardware Setup

First make all the audio and power connections to your system. Connect a DAW, external sequencer or keyboard with MIDI output directly to the RD-8 MIDI IN 5-pin DIN type input or via MIDI over USB if desired. Apply power to the RD-8 using the supplied power adapter only. Ensure your sound system is turned down. Turn on the RD-8 rear power switch. Use the MIDI page in the settings function to set the RD-8 to a unique MIDI channel within your system.

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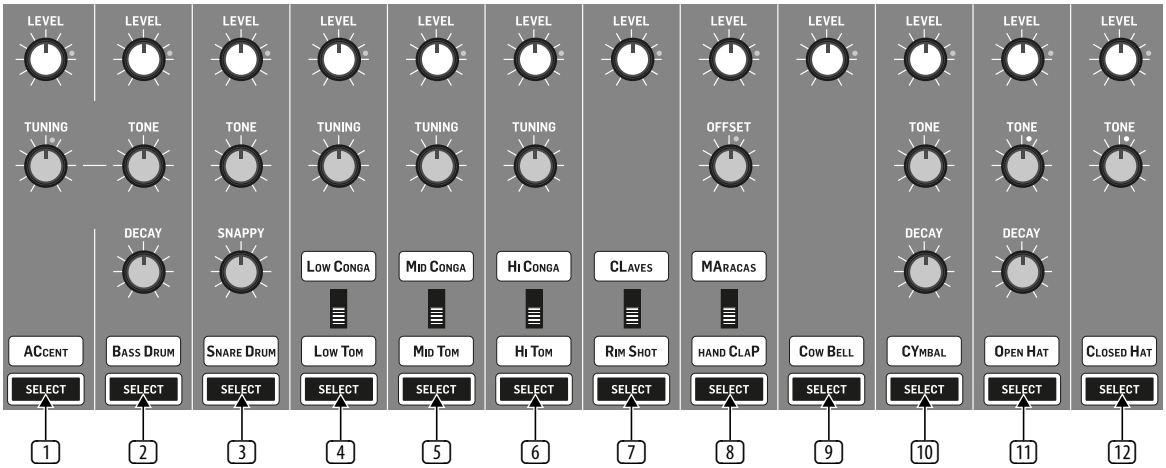
4.4 Voice Section

In this section the sounds and controls are described to help you achieve the most from the RD-8 which has 16 sounds, plus Accent.



1. **ACCENT** – This function is used to give emphasis to any voice programmed on the same step. The LEVEL control determines the amount of emphasis given to the selected voices. Turn Counter Clockwise (CCW) to reduce the amount of global Accent. Turn Clockwise (CW) to increase the global Accent level. Accent can also be programmed via MIDI or USB by using a velocity value of 110 or higher. When a note is programmed above the 110 velocity level, all other sounds triggered at the same time will be accented too. **NOTE:** Accent is global across all voices. Any step with an accent programmed on it will accent all voices programmed on that step.
2. **BASS DRUM** – This classic sound defined a generation. The LEVEL control adjusts the level compared to the other voices. TONE applies a filter to the sound, CCW to remove high frequency information. Turning CW brightens the sound. DECAY controls how long the drum will ring. Turn CW for longer tones. The TUNING function (placed in the Accent section but controls the bass drum only) changes the pitch of the bass drum, turn CCW for low sounds, turn CW to raise the pitch.
3. **SNARE DRUM** – The SNAPPY control simulates the sound of the snares microphone moving closer to and from the bottom drum head. LEVEL and TONE control as the bass drum voice.
4. **LOW TOM/LOW CONGA** – The switch determines which sound is in use. TUNING adjusts the pitch of the sound. Turn CCW for low sounds and CCW to raise the pitch. LEVEL control is the same as the bass drum voice.
5. **MID TOM/MID CONGA** – Same functions as (4) LOW TOM/LOW CONGA.
6. **HI TOM/HI CONGA** – Same functions as (4) LOW TOM/LOW CONGA.
7. **RIM SHOT/CLAVES** – The switch determines which sound is in use. The LEVEL control adjusts the level compared to the other voices.
8. **HAND CLAP/MARACAS** – The switch determines which sound is in use. The LEVEL control adjusts the level compared to the other voices. OFFSET adjusts the length of the hand clap only, from short (CCW) to long (CW).
9. **COW BELL** – The level control gives you more cow bell, if desired.
10. **CYMBAL** – LEVEL and TONE control as the bass drum voice. DECAY controls how long the cymbal rings.
11. **OPEN HAT** – The controls are the same as the CYMBAL voice.
12. **CLOSED HAT** – LEVEL and TONE control as the bass drum voice. When the closed hat is programmed on a step immediately after an OPEN HAT, the closed hat voice cuts the OPEN HAT voice, which is a classic drum machine trick to simulate a real hi-hat.

5. Creating a Pattern (Step Mode)

Patterns can use up to 64 steps which gives a great deal of flexibility.

How to record a basic 16-step pattern:

1. Select a SONG.
2. Press PATTERN.
3. Select desired pattern number via step keys 1-16.
4. Press STEP.
5. Select desired tempo with Data control.
6. Press RECORD.
7. Select the VOICE you wish to use.
8. Steps can be programmed either with the unit playing (press PLAY) or in the stopped position. The moving white LED is the play head which shows the current play position. The TRIGGER pad can also be used to play and record the currently-selected voice.
9. Select different voices to add into the current pattern.
10. Press stop and record to exit record step mode.

How to save a pattern:

1. Once you have created your masterpiece of a pattern press PATTERN.
2. Press SAVE.
3. Press PATTERN again.
4. Select the Step number of the Pattern you wish to save, current pattern will be displayed in white after which SAVE will flash.
5. Press the flashing SAVE button to execute the operation.

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Auto Save

The Auto Save function allows certain functions to be automatically stored as listed.

All the below pattern changes will now be auto saved with STEP RECORD on:

1. Step on/off by pressing STEP button
2. Press TRIGGER to set step on when playing
3. Note repeat live record
4. Set step on/off in RAND setting menu
5. Press STEP in pattern length setting
6. Sweep erase by Hold + VOICE button
7. Erasing all steps of selected voice by ERASE + VOICE button
8. Step copy 1-16 to 17-32 etc

   To activate Auto Save enter STEP mode, hold TAP/HOLD then press RECORD to set pattern auto save on or off.

When STEP RECORD is enabled, the display shows "auto" or "manu" for 1 second to indicate the save mode.

To recall a stored pattern hold TAP/HOLD + STEP button of the pattern you wish to restore. This only works when you are in Pattern mode and set to manu (manual) save mode.

Sweep Erase

The sweep erase function can be used while playing in STEP PLAY or RECORD mode, by holding TAP/HOLD and then pressing the voice button to remove the selected voices steps from pattern while playing. The voice will be deleted before it is played. In RECORD this is permanent, in PLAY mode the notes will be restored as the play head moves past steps.

Pattern Copy

How to copy a pattern:

1. Press COPY.
2. Next select the source song with the pattern you wish to copy.
3. Then press PATTERN.
4. Next select the pattern you wish to copy from the source song via the step keys.
5. Press COPY.
6. Select destination pattern to copy to via step keys, this copies the source into this pattern in the current song.
7. Press COPY to execute the operation.

How to quick copy a pattern to other pattern locations:

1. In PATTERN mode, hold copy while pressing the step key you wish to copy to.

How to copy pages in step mode, copy page 1 (1-16), page 2 (17-32), page 3 (33-48) or page 4 (49-64) to other pages:

1. In STEP mode, press LENGTH to enter pattern length setting.
2. Select a page using the arrows and press COPY.
3. Select the page you wish to copy to with the arrows then press SAVE.

How to erase a pattern:

1. Press ERASE.
2. The SONG and PATTERN buttons will flash. Press PATTERN.
3. Select the pattern you wish to delete via one of the 16 step keys.
4. Press the now flashing ERASE button to execute the delete process. This is a permanent process and can't be undone.

How to dump a pattern:

The DUMP control works in the same way as the SAVE control. Instead of saving, the DUMP control will output the selection as a SysEx message. This action sends the pattern/song data as SysEx. This information can be saved and loaded by a third-party program or sent to another RD-8.

Auto Fill

The Auto Fill function is used to insert fill rhythms into the live play mode of the RD-8. Fills are created in the same way a pattern is created and stored. The difference between Auto Fill and normal pattern playback is that once an Auto Fill has finished playing, the function will return you to the previously played pattern unless you have selected a different pattern while the Auto Fill function is active. If a different pattern is selected, the new pattern will play after the Auto Fill pattern has ended.

The SYNTHTRIBE app is an easy way to save song and pattern data. Patterns and Songs can be imported and exported quickly.

How to use Auto Fill

Once you have programmed patterns, use any of them by pressing the AUTO FILL button in pattern mode and selecting any step key.

Tip: 4 or 8 steps are recommended for drum fills, but any size can be used up to 64 steps.

Pattern length

Pattern length can be changed from 1 to 64 steps on a pattern by pattern basis. This adjustable length can be used to create different time signatures. For example, selecting a pattern length of 12 steps with a step size using 1/16th will create a 3/4 (waltz style) time signature.

To change the number of steps in a pattern:

1. Press the STEP and RECORD buttons.
2. Press LENGTH.
3. Use the <<</>> keys either side of the LENGTH button to choose either 16, 32, 48 or 64 range as the starting point.
4. Press <<</>> keys to change to the desired pattern length. For example, if length 64 is selected, choosing step key 12 will make the pattern 60 steps long.

If you are recording a pattern with more than 16 steps, press the Autoscroll button in Step Record to alternate between blocks. For example, when recording a 24 step pattern you will alternate between block one (LED above 16 is lit) with 16 steps and block two (LED above 32 is let) with 8 steps

Pattern Range	Step Number	Pattern Length	Pattern Range	Step Number	Pattern Length
16	1	1	48	1	33
16	2	2	48	2	34
16	3	3	48	3	35
16	4	4	48	4	36
16	5	5	48	5	37
16	6	6	48	6	38
16	7	7	48	7	39
16	8	8	48	8	40
16	9	9	48	9	41
16	10	10	48	10	42
16	11	11	48	11	43
16	12	12	48	12	44
16	13	13	48	13	45
16	14	14	48	14	46
16	15	15	48	15	47
16	16	16	48	16	48
32	1	17	64	1	49
32	2	18	64	2	50
32	3	19	64	3	51
32	4	20	64	4	52
32	5	21	64	5	53

32	6	22	64	6	54
32	7	23	64	7	55
32	8	24	64	8	56
32	9	25	64	9	57
32	10	26	64	10	58
32	11	27	64	11	59
32	12	28	64	12	60
32	13	29	64	13	61
32	14	30	64	14	62
32	15	31	64	15	63
32	16	32	64	16	64

Pattern Length Quick Double

Push LENGTH, then hold TAP/HOLD and push >> (right double arrow beside LENGTH) to immediately duplicate the contents of the current length, this is very useful when you are working with for 3/4 pattern with 12 steps.

6. Playing a Pattern (Pattern Mode)

Press the PATTERN button and select the pattern that you wish to play.

In pattern Mode, all patterns with stored pattern data are white, current active is red (you can see which patterns are programmed).

Step Repeat

This function can be used for changing patterns during a live performance. When STEP REPEAT is triggered the current step or steps (depending on the step settings) will be repeated until the TRIGGER button is released. The number of steps repeated are 1,2, 4 or 8. This is a very powerful feature that can, for example be used to loop the end of a pattern creating a fill.

To use:

1. Press STEP REPEAT.
2. Select how many repeats you require (1,2,4 or 8)
3. While a pattern is playing press and hold the TRIGGER button to repeat steps.
4. The step number can be changed while the TRIGGER button is held to create different loops effects.
5. Press STEP REPEAT to exit.

Note Repeat

This feature can be used for transforming patterns during a live performance. When Note Repeat is triggered the currently selected voice will be repeated until the TRIGGER button is released. The number of notes repeated are 1,2, 4 or 8. This creative feature can be used to create drum roll and ratchet style effects on the fly by repeating the current note while the rhythm continues to run.

To use:

1. Press NOTE REPEAT.
2. Select how many repeats you require (1,2,4 or 8).
3. While a pattern is playing press and hold the TRIGGER button to repeat notes.
4. The note number can be changed while the TRIGGER button is held to create different fill effects.
5. Press NOTE REPEAT to exit.

NOTE: Note repeats can be recored in STEP RECORD mode. To remove a NOTE REPEAT from a step, remove the programmed step from the pattern. The red LEDs above indicate if the selected step has a repeat of 1,2,4 or 8 programmed.

Note repeat can also be programmed:

- Step 1: enable note repeat and select a repeat number in STEP mode.
- Step 2: select any voice you want.
- Step 3: hold STEP number button then press TRIGGER.

Note repeat can be added with or without step record on with this method.

Track Mute

This function lets you mute any voice(s) within a pattern, song or globally.

To mute a voice(s):

1. While a pattern is playing select track MUTE.
2. Select the voice(s) you wish to mute.
3. The muted voice(s) will be illuminated in red.
4. Press track MUTE to exit.

NOTE: Hold the HOLD/TAP button and press MUTE to clear all mutes.

Solo functions

This function gives you the ability to solo a voice or voices within a pattern, song or globally.

To Solo a voice(s):

1. While a pattern is playing select track SOLO.
2. Select the voice(s) you wish to solo.
3. The soloed voice(s) will be illuminated in white.
4. Press track SOLO to exit.

NOTE: SOLO will always take priority over MUTE. Soloing a voice that is muted will cause that voice to sound. Hold TAP/HOLD and press SOLO to clear all solos.

Instant Pattern Switching

This function allows patterns to be instantly switched to a different pattern at the same play head position in time.

To perform this switch first select PATTERN MODE. Then hold the PATTERN button and select the next pattern with any white step key (stored pattern).

7. Creating a Song (Pattern Chaining Mode)

Pattern mode can be used to trigger any of the 16 patterns available when playing back. Patterns can be chained together to form a song by the following steps:

1. Select song via 16 step keys.
2. Press PATTERN to enter Pattern mode.
3. In Pattern Mode press the RECORD button.
4. Press the STEP BUTTON to select the first pattern in your song.
5. Press the AUTO SCROLL button on and the LENGTH button will be flashing.
6. Press the LENGTH button (lights solid),
7. Use the DATA knob to select number of repeats.
8. Press any of the STEP BUTTONS to add next step pattern to the song.
9. Repeat steps 7–8 until all desired patterns have been entered.
10. At any time use the << />> keys with the AUTO SCROLL button lit to move forward and backward through the song to check programming. If the LENGTH button is lit, the display will show number of repeats; if the LENGTH button is flashing, the display will show the pattern number of that step.
11. Save the song (with Auto Scroll on).

To save the song that you have just created:

1. Press SAVE.
2. Press SONG.
3. Select destination via step key (current song highlighted with a white LED)
4. Press SAVE to execute operation.

To Erase a selected pattern in the chain, move to the pattern you wish to remove (by using the << and >> buttons) and press Erase.

Note: Make sure you store the song with the Auto Scroll on otherwise your song will not playback as programmed.

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Note: When you erase a pattern from the chain it doesn't remove/update the number of repeats in that place, so if Pattern 3 repeated 6 times and that pattern is deleted from the chain, Pattern 4 would move to that position and will be repeated 6 times.

Live Data Vs Stored Data.

In Song mode there are two forms of data stored:

Live Data: Any changes to songs or patterns that have been made and not stored are held in live memory

Stored Data: When a song has been stored.

Use the TAP/HOLD button while editing in COPY/ERASE/DUMP to select either the Live or Stored data.

To erase the live or stored song data:

1. Enter SONG mode.
2. Press ERASE.
3. Select SONG.
4. Use TAP/HOLD to select Live or Stored data.
5. Press ERASE to complete the operation.

Changing the current song while in playback.

It is possible to change the current song while in playback. This allows songs to be changed on the fly when needed without having to stop playback.

1. Enter SONG MODE.
2. Hold TAP/HOLD button.
3. Select the next song with step button (1-16) to go to after the current pattern has finished.
4. The song step button you have selected will flash white while the others will flash red, now select the pattern from the new song.
5. When pattern is selected, the button will fast flash red until the selected song and pattern starts.

Note: this will break the song chain playing.

8. Creating a Song Chain (Song Mode)

Songs are a collection of up to 16 patterns which can be played and interacted with in a live playing format. Pattern Record mode is used to arrange the patterns into the structure of a song (described in section 7). Songs must be stored with Auto Scroll on in order to chain songs together.

A total of 16 songs can be created with up to 16 patterns in each. That makes 256 possible patterns in the unit at any one time.

Please note a song has to play to the end before it will advance to the next song. This is how seamless playback is created for extended performances. You cannot switch songs halfway through playback. This can only be done by stopping playback and selecting a different song.

To chain songs:

1. Press the SONG button to enter Song Mode, make sure RECORD is disabled, USE the STEP BUTTONS 1-16 to choose a song (white LED on).
2. Press the RECORD button.
3. You can now select the next song in the chain, this will be shown by a red LED.
4. If no Song is selected the chain will go back to Song 1.
5. Save song.

Example:

After you have programmed and saved 3 songs that are song 1, song 2 and song 3, follow the above instructions, you can chain song 1 to song 2 as below:

1. Press the SONG button to enter Song Mode, make sure the RECORD is disabled, press STEP 1 to choose song 1.
2. Press the RECORD button.
3. Press STEP 2 to chain song 2 to song 1, the red LED of STEP 2 will light.
4. Save song 1

Now to chain song 2 to song 3:

1. Press the SONG button to enter Song Mode, make sure the RECORD is disabled, press STEP 2 to choose song 2.
2. Press the RECORD button.
3. Press STEP 3 to chain song 3 to song 2, the red LED of STEP 3 will light.
4. Save song 2

As song 3 has not been selected in to a chain song, it has the default chain song which is song 1.

After finishing the above steps, press RECORD to disable it, press STEP 1 to select song 1, make sure both AUTO SCROLL in Song and Pattern Mode are set to on, then press play, the sequencer will play from song 1 to song 2 then to song 3. If the song chain PREFS is set to loop, after song 3 plays to the end it will go back to song 1 again.

Please note that this feature over-rides the Chain Songs function in Settings. Deselecting the AUTO SCROLL button while a song is playing reverts to the original Chain Songs setting.

NOTE: When Auto Scroll is active for Songs it will affect how patterns are played back so turn Auto Scroll off for normal pattern playback.

TIP: In the SYNTHTRIBE app patterns and songs can be created and saved to and from the RD-8.

Auto save the chain song:

In SONG mode with record enabled, press any step button to select that song as a chained song for current song, the chained song will be auto saved.

9. Wave Designer

Wave Designer is a powerful tool for adjusting signal transients and dynamics, such as attack and sustain. Use the Wave Designer to make a snare drum really crack in the mix, or to expand the bass drum to be even more devastating. With both ATTACK and SUSTAIN controls set to 12 o'clock the Wave Designer is essentially in bypass and will not affect any voices being sent to the Wave Designer via the bus.

Adjusting the ATTACK knob will make the opening transient of the voice sound punchier. Increasing the SUSTAIN control acts in a similar way as a compressor, allowing the peaks to carry on longer before decay. The effect can also be used to reduce the sustain for a more staccato sound.

NOTE: Using a long sustain on naturally staccato sounds (e.g. Rim Shot) may cause noise. Dial this noise out by reducing the sustain amount.

All voices sent to the Wave Designer as described will then pass into the Analog

Filter section to be processed.

The SIG LED shows that a signal is present in the Analog Filter/Wave Designer bus.

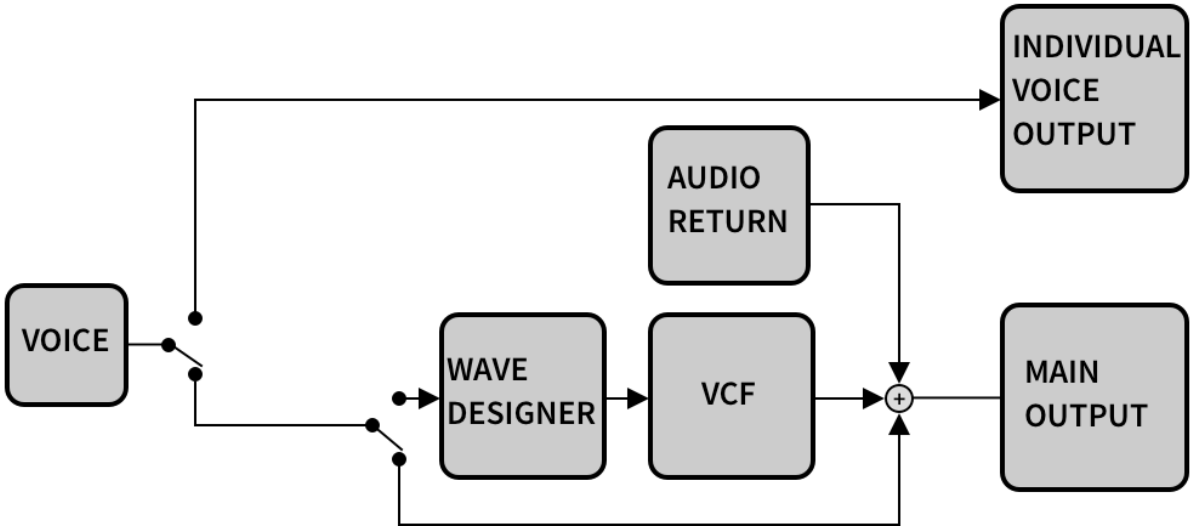
The SEND button activates the Wave Designer circuit.

How to assign voices to the FX bus:

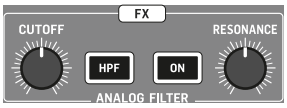
1. Press SEND in the FX sections (flashes orange).
2. Use SELECT to assign which voices go to the bus (solid pink LED indicates voice sent to the FX bus).
3. Press SEND in the FX section to exit. SEND button will be solid white to show voices are assigned to the FX bus.

TIP: Hold TAP/HOLD while pressing SEND to clear all voice from the FX bus.

The diagram below shows the audio routing of the voices as they pass through the RD-8. Only one voice is shown in this example, but the same process applies to all voices.



10. Analog Filter



The Analog Filter section works on selected sounds routed via an audio bus fed from the Wave Designer circuit.

The CUTOFF control sets the frequency where the filter is applied. The filter cut off can be programmed and automated (when the ON button is flashing, automation is active).

When the HPF (High Pass Filter) button is engaged the filter cuts the the low frequency cutoff point as you turn the control CW. When the HPF button is not engaged, the CUTOFF knob defaults to a lo-pass filter (LPF), which gradually cuts the high frequencies as you turn the control CCW.

Press the ON button to activate the filter circuit.

The RESONANCE control adjusts the resonance of the filter. Turning CW adds a peak at the cutoff frequency that accents the surrounding frequencies.

The filter CUTOFF control setting can be recorded as automation. After programming a pattern, add the voice or voices you wish to be processed by the Analog Filter and Wave Designer bus as described earlier in this manual. Next, while the pattern is playing and in Record Mode, rotate the CUTOFF knob and listen to the results. Once you are happy with your filter sweep exit Record Mode. Next time you play the pattern, the recorded filter sweep will play back.

Live Filter Mode can be toggled on and off, and this toggling action gives you either manual control of the filter frequency or automated Filter Mode, which uses the stored filter automation data. The live Filter Mode can be toggled on and off by holding the TAP/HOLD button and pressing the filter ON button to activate different states:

- Flashing filter ON button= Filter plays stored automation data
- Solid filter ON button = Filter in live control mode

At any time, you can drop into Record Mode and adjust the filter settings that will be stored with the current pattern, as long as the filter settings are set to Pattern (see SETTINGS 11.5 below).

It is also possible to manually program the filter per step or to edit a recorded filter sweep.

1. Press SETTINGS.
2. Press FILTER (STEP BUTTON 6).
3. Pressing different step keys (1-64) will display the current filter position from 0, turn the DATA control counter clockwise (CCW) to 255 turn clockwise (CW). Depending on which filter setting is in use, HPF or LPF, the filter will be fully open or closed. Up to 64 steps can be programmed using the <<</>> keys in the LENGTH section to navigate step position.
4. Press SETTINGS twice to exit.
5. Save PATTERN.

NOTE: Filter automation will now carry across when extending / copying lengths of patterns.

- turning the Cut Off control in play mode will end playing the automated Filter mode.

- turning the Cut Off knob in record with Filter on will start recording the automated Filter.

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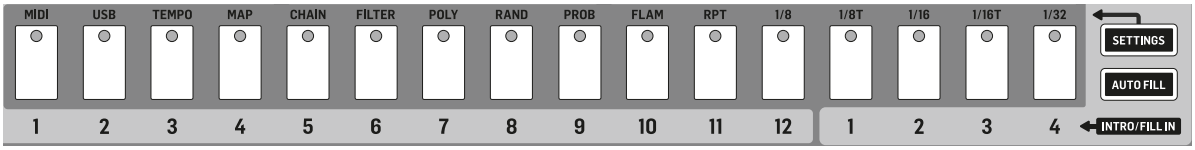
11. Settings

The Settings functions are listed below. All features are accessed by pressing the SETTINGS button and selecting the associated step key.



11.1 MIDI

To enter the MIDI settings page press SETTINGS, select MIDI (STEP BUTTON 1) and use the TAP/HOLD key to access the various pages described below:

1. Choose the MIDI channel from 1-16, All or Out (The Output setting follows the MIDI OUT setting in the next step below) for the incoming MIDI IN port.
2. Select the MIDI OUT channel from 1-16.
3. Turn on FORWARD TO USB to send the MIDI output of the unit to the USB OUT.
4. SOFT THRU on/off turns the MIDI OUT jack into a 2nd MIDI THRU port by sending the data from the MIDI IN to the MIDI OUT port.
5. DEVICE ID sets the units ID from 1-16. This is helpful when dealing with multiple units via SysEx.

11.2 USB

To enter the USB MIDI settings page press SETTINGS, select USB MIDI (STEP BUTTON 2) and use the TAP/HOLD key to access the various pages described below:

1. Choose the USB MIDI channel from 1-16, All or Out (The Output setting follows the USB MIDI OUT setting in the next step below) for the incoming USB MIDI IN port.
2. Select the USB MIDI OUT channel from 1-16.
3. Turn on FORWARD TO MIDI sends the USB MIDI output of the unit to the MIDI OUT.

NOTE: Care should be taken with Forward to MIDI/USB settings when both MIDI and USB interfaces are connected to the same computer, as there is a possibility of data loops occurring.

11.3 CLOCK

To enter the CLOCK settings page press SETTINGS, select CLOCK (Step key 3) and use the TAP/HOLD key to access the various pages described below:

Tempo Preference

Swing Preference

Probability Preference

Flam Preference

Analog Clock Mode

Tempo Preference Options:

1. Global, where all patterns play at the set tempo, even if a different tempo is stored within a pattern or song.
2. Song, where all patterns within in a song will follow the tempo set within that song, even if a different tempo is stored within a pattern.
3. Pattern, where all patterns will play at the tempo they have been saved with and not be affected by global or song tempo changes.

Swing Preference Options:

1. Global, where all patterns Swing settings, even if a different Swing setting is stored within a pattern or song.
2. Song, where all patterns Swing settings will follow the setting a within that song, even if a different Swing setting is stored within a pattern.
3. Pattern, where all patterns will play with the Swing settings they have been saved with and not be affected by global or song Swing changes.

Probability Preference Options:

1. Global, where all the patterns probability settings, even if a different probability setting is stored within a pattern or song.
2. Song, where all patterns probability settings will follow the probability setting within that song, even if a different probability setting is stored within a pattern.
3. Pattern, where all patterns will play with the probability settings they have been saved with and not be affected by global or song probability changes.

Flam Preference Options:

1. Song, where all patterns flam settings will follow the flam setting within that song, even if a different flam setting is stored within a pattern.
2. Pattern, where all patterns will play with the flam settings they have been saved with and not be affected by song flam changes.

Analog Clock Modes

PPQ (Pulses Per Quarter) is the smallest unit of time used for sequencing note and automation events, both by step sequencers and in the MIDI standard. Most MIDI sequencers allow the number of PPQ to be varied for more or less temporal resolution depending on the needs of the performer. The default is 24 PPQ, as this is the most commonly used setting.

This function allows communication with various analogue clock types as listed below:

Clock Settings
1 PPS
1 PPQ
2 PPQ
4 PPQ
24 PPQ
48 PPQ

11.4 MAP

The map function allows you to change the MIDI notes that trigger the RD-8 voices either via the USB or MIDI ports.

The default numbers are listed in the table below.

Voice	MIDI Note No.
Bass Drum	36
Snare Drum	40
Low Tom/Low Conga	45
Mid Tom/Mid Conga	47
Hi Tom/Hi Conga	50
Rim Shot/Claves	37
Clap/Maracas	39
Cowbell	56
Cymbal	51
Open Hat	46
Closed Hat	42

To enter the MAP settings page press SETTINGS, select MAP (STEP BUTTON 4) and use the SELECT key for each voice to view the current MIDI note number. The DATA knob can be used to adjust the number from 0-127.

The MIDI map is set globally and is the same for all songs and patterns.

11.5 PREFS

To enter the PREFS settings page press SETTINGS, select PREFS (Step key 5) and use the DATA knob to adjust the various settings.

Chain Songs

The Chain function allows you to link together songs. PREFS has three options:

- **Loop** – Causes selected song to loop from beginning to end until the STOP button is pressed. Pressing the PLAY/PAUSE button will cause the next selected song to start from the beginning.
- **Hold** – Causes the last bar of the selected song to repeat until stop is pressed. Pressing the PLAY/PAUSE button will cause the next selected song to start from the beginning.
- **Stop** – The selected song will run from beginning to end, then stop at the end of the last bar. Pressing the PLAY/PAUSE will cause the next selected song to start from the beginning.

Note that the above preferences are over-ridden when chaining songs (see section 8).

Filter HPF Preference

Set the HPF on/off state Globally, by Song or by Pattern.

Filter Io Preference

Set the Filters on/off state Globally, by Song or by Pattern.

Filter Auto Preference

Set the filters Automation state Globally, by Song or by Pattern. This determines how the filter uses recorded filter automation information.

Poly Preference

Set the Poly loop function to be controlled Globally, by Song or by Pattern (See section 11.7 for more information on polymetric patterns).

Step Size Preference

Set the Step Size to be controlled Globally, by Song or by Pattern.

Auto Advance Preference

Set the Auto Advance Globally or by Song.

Auto Scroll Preference

Set the Auto Scroll function Globally or by Pattern.

Bus Send Preference

Set the bus send to Filter and Wave Designer Globally, by Song or by Pattern

Mute Preference

Set the mute control preference Globally, by Song or by Pattern

Solo Preference

Set the solo control preference Globally, by Song or by Pattern

11.6 FILTER

The filter CUTOFF knob setting can be recorded as automation and programmed into a pattern to create sweeping textures and effects as described in section 10.

11.7 POLY (Polymetric)

Note: with POLY mode ON, step repeat does not function, and the white play head LED is disabled.

Polymeter (poly) is the simultaneous use of two or more conflicting rhythms. In this unit, it is possible to change the number of steps played back per voice to create interesting overlapping rhythms. For example, 16 steps of Bass Drum can be played while 15 steps of Snare which will make the pattern evolve over time. It really must be experimented with to hear its full potential.

Each of the 12 voices can be set to a different Polymeter which will work across all 64 steps of a pattern. This lets you create large evolving percussive patterns that can evolve over time.

To enter Poly Mode:

1. Press SETTINGS.
2. Press POLY (STEP BUTTON 7).
3. Use the DATA control to activate Poly Mode.
4. Select the voice you wish to reduce the number of steps (this is none destructive).
5. All the step LED's will illuminate to show the current status of the selected voices Polymeter settings.
6. Select the step key you wish to use to reduce the pattern playback. If a pattern is 32, 48, or 64 steps long use the <<</>> keys to navigate to the step you wish to use.
7. Flashing LEDs indicate any steps that will not be triggered.
8. Press SETTINGS twice to exit.

To return to normal pattern playback turn poly mode off or press the step key which is the end of the chosen pattern length i.e. 16, 32, 48 or 64 steps.

If you are using Poly mode with a pattern containing more than 16 steps then all voices which are playing every step, including accent, must have all the used steps selected with poly mode on in order that the pattern plays correctly.

For example, if you have a pattern programmed of 32 steps. Setting poly mode On a voice, then setting the range to 48 steps, then setting all the other voices to poly mode on and to the length of the pattern (in this case 32) will result in the last 16 steps of the voice set to 48 steps being silent if nothing has been programmed there (you could also fill the last 16 steps for more sonic interest). If you don't set your non-Poly voices to the nominal pattern length the pattern will only loop the first 16 steps.

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Please note that individual voices can have Poly lengths that are longer than the nominal pattern length, for extra rhythmic variation.

POLY mode defaults to be stored per pattern.

11.8 RAND (Random)

This function allows randomly played sounds to trigger on a pre-selected group of voices on any pre-programmed step that you wish to have the ability to hear random voices triggering. This can be used to create indiscriminate variations into patterns, for example, random tom fills.

To add to a pattern:

1. Press SETTINGS.
2. Press RAND (STEP BUTTON 8).
3. Pick the voices you want with the SELECT buttons.
4. Use the step keys (1-64 via length navigation) to apply the random action on the steps you require.
5. Press SETTINGS twice to exit.

NOTE: Random step settings are stored on a per pattern basis.

11.9 PROB (Probability)

The **PROB** setting allows you to adjust the probability of predefined steps playing as programmed. This Probability function is great for adding a human feel to patterns by settings how likely a programmed note will play. This simulates how a drummer could miss playing a drum.

The range can be set from 0% to 100%. As a guide 0% means a programmed voice won't trigger, 50% allows voices to be played around half of the time, while 100% will trigger the voice as programmed.

By default, all steps in a pattern are not enabled to be controlled by the PROB setting.

1. Press SETTINGS.
2. Press PROB (STEP BUTTON 9).
3. Select the voice you wish to give probability to.
4. Use the step keys and length navigation arrows to enable probability on the steps (up to 64 steps) you require.
5. Adjust the probability range with the DATA control to taste (0% causes the voice to not trigger where as 100% signifies the voice will trigger as programmed).
6. Press SETTINGS twice to exit.

Probability step settings are stored per pattern, but the amount (0%-100%) is controlled globally.

PROB programmed steps are shown in white and adding PROB on a step turns it red.

11.10 FLAM

Flam is the simulated effect of a drummer hitting a note with 2 sticks. The amount of flam dictates the length of time between the next hit after the first. Range from 0-24 adjusts the width of the flam and is set globally.

By default, all steps in a pattern are not enabled to be controlled by the FLAM setting. Flam can be turned on and off per step as described below:

1. Press SETTINGS.
2. Press FLAM (STEP BUTTON 10).
3. Select the voice you wish to add flam on.
4. Use the step keys (1-64 via length navigation arrows) to enable flam on the steps you require.
5. Adjust the flam range with the DATA control to taste (0 = No Flam. 24 = Longest flam length).
6. Press SETTINGS twice to exit.

The global setting can also be changed by selecting FLAM with the DATA MODE button and using the DATA knob to adjust the flam length between hits.

FLAM programmed steps are shown in white and adding FLAM on a step turns it red.

11.11 RPT (Note repeat)

Note repeat lets you program a step to repeat either 1,2,4 or 8 times. This can be used to add extra ratchet style rolls to voices on a pre-defined step (1-64) by completing the following:

1. Press SETTINGS.
2. Press RPT (step key 11).
3. Select the voice to which you wish to add repeats.
4. Select the step key (1-64 via length navigation arrows) to enable repeat on that step. Each step in a pattern can have a different repeat value.
5. Select the number of repeats (1,2,4 or 8).
6. Turn on the repeat with the NOTE REPEAT button.
7. Select the next step to add more repeats or press SETTINGS twice to exit.

Note repeats can recorded 'live into a pattern when in step record mode. Select the repeat amount 1,2,4 or 8 with Note Repeat on. Use the trigger while in Step Record to record the Note Repeat information. To remove the note repeat, remove the programmed voice step.

Note repeat can also be programmed:

- Step 1: enable note repeat and select a repeat number in STEP mode.
- Step 2: select any voice you want.
- Step 3: hold STEP number button then press TRIGGER.

Note repeat can be added with or without step record on with this method.

11.12 Step Size Preference

The step size of a rhythm pattern refers to the note duration of a step. When composing rhythms, the basic unit of duration (in time) is a 'bar'. The step sizes you can choose on your RD-8 are 1/8, 1/8T, 1/16. 1/16T, and 1/32.

If you choose the step size 1/16, the duration of a single step is 1/16th of a bar. This means that a 16 step pattern has a duration of exactly one bar.

The durations are as follows:

- **1/8** = 1/8th bar.
- **1/8T** = 1/12th bar
- **1/16** = 1//16th bar (default)
- **1/16T** = 1/24th bar
- **1/32** = 1/32th bar

To change the step size preference:

1. Press SETTINGS
2. Press the STEP BUTTON associated with the step size you require (1/8, 1/8T, 1/16, 1/16T or 1/32).
3. Press SETTINGS twice to exit.

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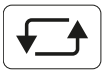
11.13 SYNC

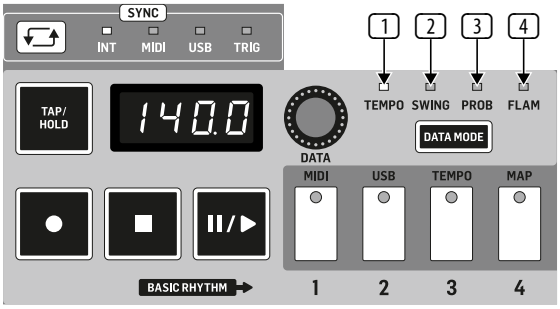


Pressing the **SYNC** button multiple times scrolls through the 4 Sync option available.

1. **INT (internal)** – The sync is set by the unit's internal clock.
2. **MIDI** – The sync is taken from the MIDI IN port. A MIDI start message is required in order for playback to start.
3. **USB** – The sync is taken from the USB port. A message is required in order for playback to start.
4. **TRIG (clock)** – The sync is taken from the SYNC IN port. Clock start signal is required or playback can be started manually. (Sync In jack has start / stop signal on ring and clock on tip).

11.14 DATA MODE

The **DATA MODE** button toggles between the four available parameters and uses the DATA control to adjust parameters:



1. **TEMPO** – changes pattern step timings by quantizing each drum beat to the nearest step and then delaying the playback of every other step in the pattern. The DATA control adjusts the Swing range from 25% negative swing to 50% (straight), then on to 75% (Full Swing).
2. **SWING** – changes pattern step timings by quantizing each drum beat to the nearest step and then delaying the playback of every other step in the pattern. The DATA control adjusts the Swing range from 25% negative swing to 50% (straight), then on to 75% (Full Swing).
3. **PROB (probability)** – In PROB settings menu you can select the steps as described earlier in this manual. The global settings allow you to adjust the probability that these steps will play programmed note events. This is a number can be set anywhere in between 0%-100% range to simulate a human element to patterns.
4. **FLAM** – Part of a pattern of RD-8, consisting of a stroke preceded by a grace note. Range 0-24 adjust the width of the flam. Flam is the simulated effect of a drummer hitting a note with 2 sticks. The amount of flam dictates the length of time between the next hit after the first and can be programmed per step.

11.15 TRIGGER ASSIGN

Trigger out 1 & 2 can be assigned to any voice. Trigger 3 is tied to Accent.

To access the TRIGGER ASSIGN settings press SETTINGS, holding TAP/HOLD, then press STEP 7 to enter the settings menu, press TAP/HOLD to switch between trigger assign 1 and 2. Use any Voice Select button to send to the target trigger output (solid Light when selected).

12. Software Updates

The RD-8 updater can be downloaded by going to www.musictribe.com. Please follow the steps on the website and updater to update your RD-8.

To check the current firmware version:

1. Press SETTINGS.
2. While holding the TAP/HOLD button press CHAIN/PREFS (STEP BUTTON 5).
3. The LCD will display the firmware version.
4. Press SETTINGS to exit.

It is possible to perform a full factory reset by following these steps, please note this clears all songs, settings and pattern data and is not reversable.

To reset to default factory settings:

1. Press settings.
2. Hold Tap/Hold and press step key 16
3. The display will now say Wait.
4. When the factory reset is complete the display will show Done.
5. Now turn the unit on and off to complete the procedure.

NOTE: After updating from firmware 1.3.5 to version V2.0.2 or higher The SYNTHTRIBE App can be used for future updates. This means DFU mode (the small boot button next to the USB socket) will no longer be required to be pressed. Instructions for updating with the SYNTHTRIBE can be found in the firmware release notes.

The RD-8 Windows Driver Installation document is available on the Behringer website if you are having issues with PC drivers. This document will guide you through the installation process.

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13. Parameters

There are three different types of data files used by the RD-8. The contents of these file types are described herein.

Global Settings File

All of the RD-8's Settings and Preferences are stored in the Global Settings file. This file is loaded from Storage Memory when the unit is powered on. The exact contents of the file are described below:

Settings

Settings in the Global Settings file are automatically saved back to Storage Memory whenever they are changed.

Setting Name	Description	Value
Data Version	From time to time, new versions of the RD-8 firmware will be released. This firmware will contain both bug fixes and new features. Additional parameters may be added to the Global Settings Data file to support those new features. The Global Settings Data file is therefore versioned to guarantee compatibility between firmware releases.	
Product Variant	The RD-8 is one of a number of Behringer products that sequence songs. This parameter is used to distinguish between RD-8 Song Data files and other song data files.	
Last Loaded Song	Each time a song is loaded into the sequencer it is logged. When you power on the unit, the last song to be logged before the unit was powered off will be loaded back into the sequencer.	1 – 16
Last Loaded Pattern	Each time a pattern is loaded in the sequencer it is logged. When you power on the unit, the last pattern to be logged before the unit was powered of will be loaded back into the sequencer.	1 – 16
Device ID	Each RD unit in a system can have its own unique ID number.	1 – 16
Clock Source	Press Sync to cycle through the 4 clock source options.	INT, MIDI, USB or CLK
Analog Clock Mode	Choose the type of clock that the clock input follows.	1, 2, 4, 24 and 48PP
MIDI RX Channel	Set the MIDI in receive channel.	1 – 16
MIDI TX Channel	Set the MIDI out transmit channel.	1 – 16
MIDI to USB Thru	Set MIDI in to send to USB Thru.	On/Off
MIDI Soft Thru	Send all MIDI in Data to the MIDI out port.	On/Off
USB RX Channel	Set the USB MIDI receive channel.	1 – 16
USB TX Channel	Set the USB MIDI transmit channel.	1 – 16
USB to MIDI Thru	Send the USB MIDI in to the MIDI thru port.	On/Off
Voice Note Mappings (1 - 11)	Voice MIDI note map. Can be changes from the default if desired.	various
Song Chain Mode	Chain songs together for live performance.	0 – Hold, 1 – Loop, 2 – Stop
Trigger Out Assign1	Set the trigger out to follow which voice	1 – Bass Drum, 2 – Snare Drum, 3 – LOW TOM, 4 – MID TOM, 5 – HI TOM, 6 – RIM SHOT, 7 – HAND CLAP 8 – COW BELL, 9 – CYMBAL, 10 – OPEN HAT, 11 – CLOSED HAT
Trigger Out Assign2	Set the trigger out to follow which voice	Same with Trigger Out Assign1

Preferences

In addition to the Settings described above, there are a number of Preferences that can be used to specify whether certain sequencer parameters will persist on a Global, Song or Pattern basis. Just like the Settings, the Preferences in the Global Settings file are automatically saved back to Storage Memory whenever they are changed.

Preference Name	Description	Value
Tempo Preference	This preference selects which Tempo parameter is used by the sequencer; Global Tempo, Song Tempo or Pattern Tempo.	0 = Song, 1 = Global, 2 = Pattern
Swing Preference	This preference selects which Swing parameter is used by the sequencer; Global Swing, Song Swing or Pattern Swing.	0 = Song, 1 = Global, 2 = Pattern
Probability Preference	This preference selects which Probability parameter is used by the sequencer; Global Probability, Song Probability or Pattern Probability.	0 = Song, 1 = Global, 2 = Pattern
Flam Preference	This preference selects which Flam parameter is used by the sequencer; Global Flam, Song Flam or Pattern Flam.	0 = Song, 1 = Global, 2 = Pattern
Filter Mode Preference	This preference selects which Filter Mode parameter is used to set the mode RD-8's Analog Filter.	0 = Song, 1 = Global, 2 = Pattern
Filter Enable Preference	This preference selects which Filter Enable parameter is used to enable or disable by the Analog Filter on the RD-8's FX bus..	0 = Song, 1 = Global, 2 = Pattern
Filter Automation Preference	This preference selects which Filter Automation parameter is used by the sequencer. It also selects which set of Filter Step Values are used when the automation is active.	0 = Song, 1 = Global, 2 = Pattern
Polymeter Preference	This preference selects which Polymeter parameter is used by the sequencer.	0 = Song, 1 = Global, 2 = Pattern
Step Size Preference	This preference selects which Step Size parameter is used by the sequencer.	0 = Song, 1 = Global, 2 = Pattern
Auto-Advance Preference	This preference selects which Auto-Advance parameter is used by the sequencer. Auto-Advance is a function of a Song but not of a Pattern. This preference is therefore limited to Song and Global.	0 = Song, 1 = Global
Auto-Scroll Preference	This preference selects which Auto-Scroll parameter is used by the sequencer. Auto-Scroll is a function of a Pattern but not of a Song. This preference is therefore limited to Pattern and Global.	1 = Global, 2 = Pattern
FX Bus Preference	This preference selects which set FX Bus assignments are used to send to voices to the FX Bus.	0 = Song, 1 = Global, 2 = Pattern
Mute Preference	This preference selects which set of Mute Bus assignments are used to mute the RD-8's voices.	0 = Song, 1 = Global, 2 = Pattern
Solo Preference	This preference selects which set of Solo Bus assignments are used to solo the RD-8's voices.	0 = Song, 1 = Global, 2 = Pattern

Global Parameters

The RD-8 has many parameters that can be tweaked to make your rhythm's more interesting. The Global Settings file contains the following list of parameters. When these parameters are in use (i.e. the corresponding Preference is set to Global), they remain fixed, even when new Songs and Patterns are loaded into the sequencer. As is the case for the Settings and Preference, Global Parameters are automatically saved back to Storage Memory whenever they are changed.

Preference Name	Description	Value
Global Tempo	Sets the tempo globally if global mode preference is selected.	20 – 240 BPM
Global Swing	Sets the Swing value globally if global mode preference is selected.	25% to 75%
Global Probability	Sets the probability a sound will play globally if global mode preference is selected.	0 – 100 %
Global Flam	Sets the flam length globally if global mode preference is selected.	0 - 24
Global Filter Mode	Sets the filter to LPF or HPF globally if global mode preference is selected.	0 = LPF, 1 = HPF
Global Filter Enable	Sets the filter on/off globally if global mode preference is selected.	0 = Off, 1 = On
Global Filter Automation	Turns filter automation on/off globally if global mode preference is selected.	0 = Inactive, 1 = Active
Global Filter Step Values (1 - 64)	Sets the filter level per step globally if global mode preference is selected.	0 – 255
Global Polymeter	Turn polymeter on/off globally if global mode preference is selected.	0 = Off, 1 = On
Global Step Size	Sets the Step size globally if global mode preference is selected.	0 = 1/8th, 1 = 1/8th Tr, 2 = 1/16th, 3 = 1/16th Tr, 4 = 1/32ndth
Global Auto-Advance	Sets whether a song will advance to the next song or not globally if global mode preference is selected.	0 = Off, 1 = On
Global Auto-Scroll	Sets whether Auto Scroll is on/off globally if global mode preference is selected.	0 = Off, 1 = On
Global FX Assignments	Sets which voices are assigned to the FX bus globally if global mode preference is selected.	0 = Inactive, 1 = Active
Global Mute Assignments	Sets which voices are muted globally if global mode preference is selected.	0 = Inactive, 1 = Active
Global Solo Assignments	Sets which voices are soloed globally if global mode preference is selected.	0 = Inactive, 1 = Active

Song Data Files

Each of the 16 songs stored in the RD-8's Storage Memory has a Song Data file. When a song is loaded into the sequencer from Storage Memory, this is the file that is loaded. The song loaded into the sequencer at any given time is called the Live Song. Changes the user makes to the Live Song Data file do not persist, the file must be saved back to the Storage Memory before another Song Data file is loaded.

Song Arrangement

All of the data in a song arrangement is contained in its Song Data file. These data is shown below:

Parameter Name	Description	Values
Song Data Version	From time to time, new versions of the RD-8 firmware will be released. This firmware will contain both bug fixes and new features. Additional parameters may be added to the Song Data file to support those new features. The Song Data file is therefore versioned to guarantee compatibility between firmware releases.	
Product Variant	The RD-8 is part of a series of Behringer products that sequence songs. This parameter is used to distinguish between RD-8 Song Data files and other song data files.	
Song Sections (1 – 16)	A song arrangement can have up to 16 Song Sections. Any of the 16 associated patterns can be loaded into a section. There is a parameter for each section.	Pattern Number (0 – 15)
Pattern Repeats (1 – 16)	When a pattern is loaded into a Song Section it can be repeated a number of times. There is a parameter for each section.	No. of Repeats (1 - 100)
Next Song	When Song Chaining is turned on, another song can be automatically cued to play after the Live Song has finished.	Song No. (0 – 15)

Song Parameters

Some of the parameters in the Song Data file are comparable to the Global Parameters. When these parameters are in use (i.e. the corresponding Preference is set to Song), loading a new song will trigger the corresponding change in the sequencer. A tempo change is one such example.

Parameter Name	Description	Values
Tempo	The tempo of the song is stored.	20 – 240 BPM
Swing	The Swing level is stored.	25% to 75%
Probability	The probability of a step being heard is stored per song.	0 – 100 %
Flam	The flam level is stored per song	0 - 24
Filter Mode	Filter Mode is stored per song, either LPF or HPF.	0 = LPF, 1 = HPF
Filter Enable	Whether the filter is on/off per song.	0 = Off, 1 = On
Filter Automation	Automation of the filter is stored per song.	0 = Inactive, 1 = Active
Filter Step Values (1 - 64)	Filter step values per song are stored.	0 – 255
Polymeter	Polymeter is either on/off per song.	0 = Off, 1 = On
Step Size	Step size is stored for the song.	0 = 1/8th, 1 = 1/8th Tr, 2 = 1/16th, 3 = 1/16th Tr, 4 = 1/32ndth
Auto Advance	Whether or not the song will auto advance to the next or not is stored per song.	0 = Off, 1 = On
FX Bus Sends	Whether or not the FX bus send is active or not, stored per song.	0 = Inactive, 1 = Active
Mute Voices	Which voices are muted, stored by song.	0 = Inactive, 1 = Active
Solo Voices	Which voices are soloed, stored by song.	0 = Inactive, 1 = Active

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Pattern Data Files

Each of the 16 patterns associated with a song has its own Pattern Data file. When a song is loaded from Storage Memory, these 16 Pattern Data files are loaded in addition to the Song Data file. These 16 patterns are called the Live Patterns. Changes made to the Live Pattern Data files do not persist. The files must be saved back to the Storage Memory before another song and its associated patterns are loaded.

Pattern Data

All of the data in a pattern are contained in its Pattern Data file. The data is shown below:

Parameter Name	Description	Values
Pattern Data Version	From time to time, new versions of the RD-8 firmware will be released. This firmware will contain both bug fixes and new features. Additional parameters may be added to the Pattern Data file to support those new features. The Pattern Data file is therefore versioned to guarantee compatibility between firmware releases.	
Product Variant	The RD-8 is part of a series of Behringer products that sequence songs. This parameter is used to distinguish between RD-8 Pattern Data files and other pattern data files.	
Accent Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Accent track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off. Step repeat size.	*See description below
Bass Drum Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Bass Drum track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off. Step repeat size.	*See description below
Snare Drum Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Snare Drum track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off. Step repeat size.	*See description below
Low Tom Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Low Tom track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off. Step repeat size.	*See description below
Mid Tom Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Mid Tom track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Hi Tom Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Hi Tom track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Rim Shot Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Rim Shot track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Hand Clap Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Hand Clap track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Cow Bell Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Cow Bell track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Cymbal Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Cymbal track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Open Hat Step Values (1 - 64)	The sequencer events triggered on the 64 steps of the Open Hat track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Closed Hat Step Values(1 - 64)	The sequencer events triggered on the 64 steps of the Closed Hat track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Pattern Length	The sequencer events triggered on the 1 to 64 steps. Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off. Step repeat size.	*See description below
Accent Poly Length	The sequencer events triggered on the 64 steps of the Accent Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Bass Drum Poly Length	The sequencer events triggered on the 64 steps of the Bass Drum Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Snare Drum Poly Length	The sequencer events triggered on the 64 steps of the Snare Drum Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Low Tom Poly Length	The sequencer events triggered on the 64 steps of the Low Tom Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Mid Tom Poly Length	The sequencer events triggered on the 64 steps of the Mid Tom Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Hi Tom Poly Length	The sequencer events triggered on the 64 steps of the Hi Tom Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Rim Shot Poly Length	The sequencer events triggered on the 64 steps of the Rim Shot Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Hand Clap Poly Length	The sequencer events triggered on the 64 steps of the Hand Clap Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Cow Bell Poly Length	The sequencer events triggered on the 64 steps of the Cow Bell Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Cymbal Poly Length	The sequencer events triggered on the 64 steps of the Cymbal Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Open Hat Poly Length	The sequencer events triggered on the 64 steps of the Open hat Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Closed Hat Poly Length	The sequencer events triggered on the 64 steps of the Closed Hat Poly track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Random On/Off	The sequencer events triggered on the 64 steps of the Random track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Random Tracks (Accent – Hand Clap)	The sequencer events triggered on the 64 steps of the Random for the Accent – Hand Clap track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below
Random Tracks (Cow Bell – Closed Hat)	The sequencer events triggered on the 64 steps of the Random for the Cow Bell - Closed Hat track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below

Parameter Name	Description	Values
Random Steps (1 – 64)	The sequencer events triggered on the 64 steps of the Random Steps track: Events include Step On/Off, Step Prob on/off, step flam on/off, Step Repeat on/off and Step repeat size.	*See description below

* Information useful for power users wishing to implement their own editors. Each of the 64 bytes in a track has its bits set/cleared as follows:

Bit 0 STEP_BYTE_MASK_ON_OFF_BIT – 1=Step On, 0=Step Off

Bit 1 RESERVED – Reserved / Not used

Bit 2 STEP_BYTE_MASK_PROBABILITY_BIT – 1=Step On, 0=Step Off

Bit 3 STEP_BYTE_MASK_FLAM_BIT – 1=Step On, 0=Step Off

Bit 4 STEP_BYTE_MASK_NOTE_REPEAT_ON_OFF_BIT – 1=Step On, 0=Step Off

Bit 5 STEP_BYTE_MASK_NOTE_REPEAT_LS_BIT 00 = Repeat 1, 01 = Repeat 2, 10 = Repeat 4, 11 = Repeat 8

Bit 6 STEP_BYTE_MASK_NOTE_REPEAT_MS_BIT 00 = Repeat 1, 01 = Repeat 2, 10 = Repeat 4, 11 = Repeat 8

Bit 7 RESERVED

Pattern Parameters

Some of the parameters in the Pattern Data file are comparable to the Global Parameters. When these parameters are in use (i.e. the corresponding Preference is set to Pattern), selecting a new pattern for playback will trigger the corresponding change in the sequencer. A change to the Step Size is one such example.

Parameter Name	Description	Values
Tempo	The tempo of the song is stored.	20 – 240 BPM
Swing	The Swing level is stored.	25% to 75%
Probability	The probability of a step being heard is stored per song.	0 – 100 %
Flam	The flam level is stored per song	0 - 24
Filter Mode	Filter Mode is stored per song, either LPF or HPF.	0 = LPF, 1 = HPF
Filter Enable	Whether the filter is on/off per song.	0 = Off, 1 = On
Filter Automation	Automation of the filter is stored per song.	0 = Inactive, 1 = Active
Filter Step Values (1 - 64)	Filter step values per song are stored.	0 – 255
Polymeter	Polymeter is either on/off per song.	0 = Off, 1 = On
Step Size	Step size is stored for the song.	0 = 1/8th, 1 = 1/8th Tr, 2 = 1/16th, 3 = 1/16th Tr, 4 = 1/32ndth
Auto Advance	Whether or not the song will auto advance to the next or not is stored per song.	0 = Off, 1 = On
FX Bus Sends	Whether or not the FX bus send is active or not, stored per song.	0 = Inactive, 1 = Active
Mute Voices	Which voices are muted, stored by song.	0 = Inactive, 1 = Active
Solo Voices	Which voices are soloed, stored by song.	0 = Inactive, 1 = Active

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14. New Features Overview

New features are detailed here for a quick view of added functions.

New features in V2.0.2

1. SYNTHTRIBE support. (right click on a step cell in the sequencer page for more step options).
2. Pattern length, step on/off will be saved automatically when programmed in RECORD mode.
3. Trigger/play sound by pressing corresponding voice button. With TAP/HOLD button held the voice will be triggered with accent on.
4. Note repeat real time recording (press TRIGGER with note repeat enabled when in STEP recording). Removing step will remove note repeat.
5. In PATTERN mode, copy currently selected pattern to other locations by holding COPY then pressing the STEP button of the destination you want.
6. In STEP MODE, copy page 1 (1-16), page 2 (17-32), page 3 (33-48) or page 4 (49-64) to other pages: 1) Press LENGTH to enter pattern length setting. 2) select a page using arrows and press COPY, 3) select another page then press SAVE. This is will be automatically saved to the pattern.
7. TRIGGER ASSIGN setting (press SETTINGS, holding TAP/HOLD then press STEP 7 to enter the settings menu, press TAP/HOLD to switch between trigger assign 1 and 2). Select any voice as trigger (solid Light when selected). Accent is tied to trigger 3
8. PROB and FLAM set to off as default, set tempo, swing and step size PREFS to pattern as default.
9. Screen dim level adjustment (holding TAP/HOLD then turn DATA knob).
10. Hold TAP/HOLD and press MUTE or SOLO to clear all mutes or solos.

New features in V2.0.4

1. Lights off for the disabled voice of MUTE/SOLO/BUS SEND, when enabled they turn to solid red/white/pink
2. Set step off steps to on when in note repeat live recording
3. Use the 4 red LEDs (1, 2, 4, 8) above the note repeat buttons to show which note repeat value is recorded on a step depending on the voice selected
4. Add sweep erase function, when playing in STEP MODE, hold TAP/HOLD then press voice button to remove steps from pattern.
5. When in STEP RECORD mode, hold ERASE then press voice button to delete all steps of the voice in pattern.
6. Support pattern changing to different songs while playing.

   1. Enter SONG MODE.

   2. Hold TAP/HOLD button.

   3. Select Song with step button (1-16) to go to after current pattern has finished.

   4. The song step button you selected will flash white and the others will flash red, now select a pattern.

   5. When pattern is selected, the button will fast flash red until the selected song and pattern starts.

Note: this will break the song chain playing.

7. Auto save the chain song: in SONG mode with record enabled, press step button to select a chain song for current song, the chain song will be auto saved.
8. Support step size changing while playing.

New features in V2.0.6.

- In STEP mode, hold TAP/HOLD then press RECORD to set pattern auto save on or off.

- Pattern length menu displayed in SONG and PATTERN mode.

- Push LENGTH, then hold TAP/HOLD and push >> (right double arrow beside LENGTH) to immediately duplicate the contents of the current length, this is very useful when you are working with for example a 3/4 pattern with 12 steps.

- When STEP RECORD is enabled, the display shows "auto" or "manu" for 1 second to indicate the save mode.

- Recall stored pattern by holding TAP/HOLD + STEP button of the pattern you wish to restore. This only works when you are in Pattern mode and set to manu (manual) save mode.

New features in V2.1.2.

Instant pattern switching - hold pattern and select next pattern.

- Added 1PPS support.
- Negative swing, 25-49%.
- Filter automation will now carry across when extending / copying
- lengths of patterns.
- Note repeat is now easier to program:
  - Step 1: enable note repeat and select a repeat number in STEP mode.
  - Step 2: select any voice you want.
  - Step 3: hold STEP number button then press TRIGGER.

  Note repeat can be added with or without step record on with this method.
- In pattern Mode, all patterns with stored pattern data are white, current active is red (You can see which patterns are programmed).
- Autofill all 16 patterns (expanded from the last 4 only)
- Flam will now have an effect on the closed hat.
- AUTO ADVANCE, if the PREFS set to song or pattern, AUTO ADVANCE will be loaded normally, if the PREFS set to global, it is disabled when loading an empty song.
- FLAM & PROB Settings: Programmed steps are now shown in white and adding FLAM or PROB on a step turns red.
- POLY mode defaults to be stored per pattern.

Note: with POLY mode ON, step repeat does not function, and the white play head LED is disabled.

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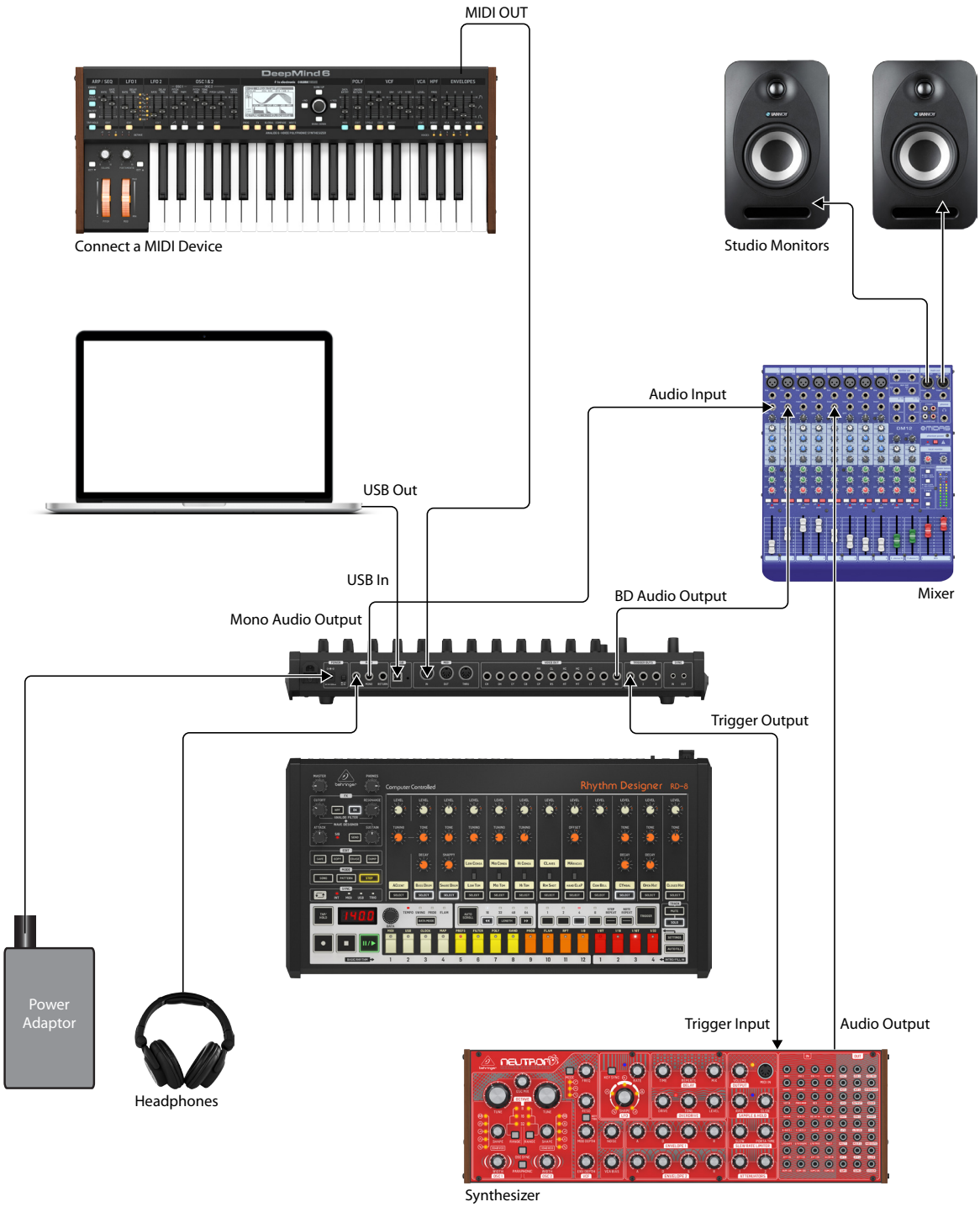
15. RD-8 Set-up Example



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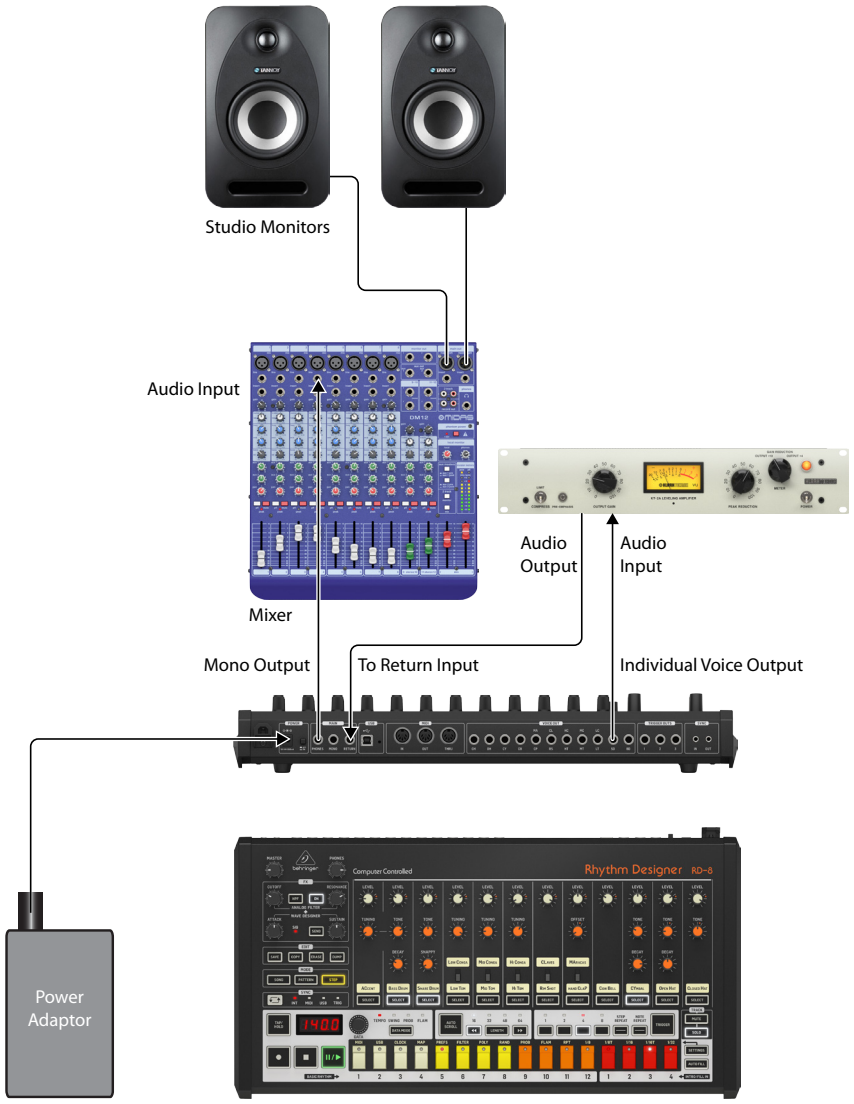
Studio Monitors
Audio Input
Mixer
Audio Output
Audio Input
Mono Output
To Return Input
Individual Voice Output
Power Adaptor
Rhythm Designer RD-8

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16. Specifications

Voices

Number of sounds	16
Type	Analog
Number of simultaneous voices	11 (12 including global accent)
Sound Controls	
Accent	Level
Bass drum	Level, tone, decay, tuning
Snare drum	Level, tone, snappy
Low, mid, hi conga / low, mid, hi tom	Level, tuning, voice selection
Claves / rim shot	Level, voice selection
Maracas / hand clap	Level, offset, voice selection
Cow bell	Level
Cymbal	Level, tone, decay
Open hat	Level, tone, decay
Closed hat	Level, tone
Select buttons	16 Voice select buttons

Connectivity

Outputs	
Phones	1 x ¼ TRS, stereo, 8 Ω impedance
Mono	1 x ¼ TRS, servo-balanced
Voice out	11 x ¼ TS, unbalanced
MIDI In, Out & Thru	3 x 5-pin DIN
Trigger outs	3 x +5 V, 1 ms pulse
Sync in / out	2 x ⅛ TS
USB	Class compliant USB 2.0, type B
Supported operating systems	Windows 7 or higher Mac OS X 10.6.8 or higher
Volume controls	Master, phones
Return (Input)	1 x ¼ TRS, balanced

Wave Designer

Bus	11 voices, independently assignable
Controls	
Attack	-15 to +15 dB, adjustable
Sustain	-24 to +24 dB, adjustable
Send button	On/off, switchable
Sig LED	Red

Analog Filter

Type	State variable, 12 dB slope
Cutoff	10 Hz - 15 kHz, adjustable
Resonance	0 - 10, adjustable
HPF button	LPF / HPF mode, switchable
On button	On / off, switchable

Sync Section

Mode selector	Internal / MIDI / USB / TRIG, selectable

Sequencer Section

Edit buttons	Save, copy, erase and dump
Mode buttons	Song, pattern and step
Control	Encoder for data editing
Playback controls	Tap / hold, record, stop, play / pause
Data mode	Tempo / swing / prob / flam, selectable
Auto scroll	On / off, rewind, length (16 / 32 / 48 / 64, selectable), fast forward
Trigger	On / off, repeat division (1 / 2 / 4 / 8, selectable), step repeat, note repeat
Track	Mute / solo, selectable
Step buttons	16 step enter buttons

Settings

Settings	Enter settings mode, use step buttons to select operation.

Autofill

Autofill	Enter autofill selection mode

Songs / Storage

Song mode	Chain any of the 16 songs together for full sets

Pattern / Storage

Capacity	16 songs, 16 patterns each
Pattern mode	Up to 99 iterations per pattern/part
Steps	64 steps

Power Supply

External power adapter	18 V DC, 1000 mA
Power consumption	15 W typical

Environmental

Operating temperature range	5°C to 40°C (41°F to 104°F)

Physical

Dimensions (H x W x D)	77 x 498 x 265 mm (3.0 x 19.6 x 10.4)
Weight	3.0 kg (6.6 lbs)

17. Glossary

RD-8 GLOSSARY

This glossary provides an explanation of useful symbols, terms and abbreviations.

AC: Alternating Current

Analog: Something which is proportional or similar to something else. In the case of the drum machine, audio electronic circuits are another form of air pressure waves. Analog signals contain distortions from the components, topology, circuits and designs which are often perceived as warmer and more natural than their digitally generated counterparts.

Attack: Increase or decrease the initial transient of the signal.

Auto Scroll: Follows the Playhead to show current step position.

Balanced Audio: A type of audio connection that uses the three wires in a cable as part of a phase-cancelling arrangement to boost the signal and reduce noise.

Bass: Lower frequencies in a signal ranging from 60 Hz to 250 Hz (Approximately B1 to B3).

Beats Per Minute (BPM): Used to describe the tempo of a composition by specifying the number of beats which should occur in every minute.

Cent: Unit of measurement for pitch tuning. There are one hundred cents in a semitone.

Chain: A function to link songs or pattern information together.

Control Voltage (CV): A voltage signal used to control any parameter. This was common on drum machines before the advent of MIDI.

Cut-Off Frequency: The frequency which a filter is set to. Beyond this frequency (in a low-pass filter, the most common), the sound is cut off (attenuated) at a rate set by the slope of the filter response curve.

dB: Symbol for decibel. A unit of measurement of the loudness of sound. See dBu.

Default: An initial value for parameter, i.e., the value before any changes have been made.

Digital Audio Workstation (DAW): A computer-based recording system. More commonly used to describe the software package used to record, process and mix.

Dip Switch: A manual electric switch that is packaged with others in a group.

Dump: To send (dump) the contents of the memory of the device over the MIDI cables as SysEx information.

Flam: The simulated effect of a drummer hitting a note with 2 sticks. The amount of flam dictates the length of time between the next hit after the first.

Filter: A device that attenuates certain frequencies while letting other frequencies through. Using a filter to reduce harmonics, changes the timbre or colour of the sound.

Gain: The amount of signal level increase provided by an amplifier stage.

Gate (Synthesizer): A signal used to trigger an event, such as a note or an envelope.

Gate (Dynamics): A device used to cut off the level of a signal when it falls below a specified threshold. Can be used to cut background noise, control reverb tails, or creatively to produce chopping type effects.

Global: The settings and parameters which govern the general operation of the drum machine and are not directly associated with the voice engines.

Harmonics: A series of integer-related sine waves at varying levels creating different timbres. Waveforms (other than a pure sinusoidal) generate various harmonics which help define the character of the sound.

Hertz (Hz): A unit of frequency equal to one cycle of a wave per second.

High Pass Filter (HPF): A filter that attenuates lower frequencies from a signal, leaving the higher frequencies unaffected.

Hum: Undesirable low-frequency tone (typically 50 or 60 Hz) present in a signal due to grounding problems or proximity to a power source or power cables.

Impedance (Z): Opposition to the flow of alternating current in a circuit, measured in Ohms.

Kilohertz (kHz): A unit of frequency equal to one thousand cycles of a wave per second.

Latency: A delay introduced by processing. Measured by the time it takes to produce a signal after a request has been made. In a synthesizer, it is the time taken to produce a note after a key has been played. In an audio interface, it is used to measure the time it takes for an input signal to reach the processor, or for a signal from the processor to reach the output.

Level: Used to describe the magnitude of a sound, often relative to an arbitrary reference.

Length: Defines the number of steps in a pattern.

Line Level: A nominal operating level used by audio equipment. Professional line level is normally +4 dBu and consumer line level is -10 dBu.

Looping: Automatically restarting a function at the end of a period of time or defined cycle, to create a continuous loop.

Low Pass Filter (LPF): A filter that attenuates higher frequencies from a signal, leaving the lower frequencies unaffected.

Map: How MIDI note numbers are assigned to voices.

Master: Overall volume control.

Meter: Visual device to indicate the level of a signal.

MIDI (Musical Instrument Digital Interface): A technical standard that describes a protocol, digital interface and connectors and allows a wide variety of electronic musical instruments, computers and other related hardware/software devices to connect and communicate.

MIDI Clock: A clock signal which is broadcast over MIDI to ensure that devices are synchronized. Also known as MIDI Beat Clock or MIDI Timing Clock.

MIDI Message: Data or information transmitted from one MIDI device to another. Each MIDI message contains at least two numbers: one that identifies the type of message being sent, and another which represents a value for the selected type of message.

Midrange: Frequencies in a signal ranging from 250 Hz to 5 kHz (Approximately B3 to D#8).

Mix: The balance of level between one signal and another.

Mixer: A device that blends input signals into composite signals for output.

Mode: The selection of song, pattern or step edit.

Monitors: Studio quality loudspeakers, providing an accurate representation of the audio signals.

Mono: A single signal.

Mute: Function that allows a signal to be silenced.

N/A: Abbreviation for not applicable or not available.

Ohm (Ω): Unit of electrical resistance.

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Output: The signal sent out by a device or process. Also used to describe the physical socket where a signal leaves a device.

Parameter: A setting whose value can be changed. The result is a sweeping effect similar to a flanger but smoother and often more natural sounding.

Pattern: A rhythmic pattern, or repeated rhythm establishing the meter and groove through the pulse and subdivision

Pitch: A quality of sound that makes it possible to judge if a sound is higher or lower than another.

Playhead: A moving white LED in the step timeline that represents the position in the pattern.

Polymeter (Poly): The simultaneous use of two or more conflicting rhythms.

Post: The point for accessing audio just after it leaves a specific component or stage. For example, Post-Fader audio is affected by the fader.

Power Supply Unit (PSU): The component in a system which is responsible for supplying and managing power.

PPQ: The smallest unit of time used for sequencing note and automation events, both by step sequencers and in the MIDI standard.

Pre: The point for accessing audio just before it reaches a specific component or stage. For example, Pre-Fader audio is not affected by the fader.

Probability (Prob): The extent to which a programmed step is likely to happen.

Random: Does not follow a definite plan or pattern.

Resonance: The emphasis/boost of frequencies around the cut-off point just before attenuation starts to occur. As resonance increases, it will reach a point where the filter will start to self-oscillate, producing a signal even when there is no input.

Return: A way to add audio into the signal path after the FX bus.

Send: Select which sounds are sent to the FX bus for further processing.

Sequencer: A programmable device or module used to arrange/sequence timed events into musical patterns and songs.

Sig (Signal): Shows presence of audio.

Step: A step is one stage in a sequence or pattern.

Solo: To isolate a chosen voice in playback.

Song: A collection of patterns played back in a predefined order.

Sub-Bass: Frequencies in a signal ranging from 10 Hz to 60 Hz (lower than C0 to approximately B1).

Sustain: acts in a similar way to a compressor, allowing the peaks to carry longer before decay. The effect can also be used to reduce the sustain for a more staccato sound.

Swing: The Swing function as we now know it – originally known as 'shuffle', a term still used to approximate the effect of a human drummer playing in swing timing by quantizing each drum beat to the nearest step and then delaying the playback of every other step in the pattern.

Synchronization (Sync): Coordination of timing between devices.

Sync (Tempo): A function where a cyclical event such as an LFO is synchronized to a tempo value.

Tap: A way to enter step information.

Tempo: The speed at which a composition is played, usually expressed in beats per minute (BPM).

Timbre: The tone, character, or aesthetic qualities of a sound.

Treble: Frequencies in a signal ranging from 5 kHz to 20 kHz (approximately D#8 to above C10).

Trigger: Activation of a function, such as the Note Repeat or Step Repeat.

Unbalanced Audio: A type of audio connection that uses two wires in a cable and does not offer the noise rejection qualities of a balanced system.

Universal Serial Bus (USB): A plug and play interface that provides a fast connection between a computer and peripherals.

Volt (V): A unit of electrical potential differential or electromotive force. A difference in charge between two points in a circuit. This difference, when combined with the rate of the charge (current) allows for the control of many analog circuits that synthesize sound.

Voice: A sound which can play a single note at a time.

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FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION

Behringer

RHYTHM DESIGNER RD-8

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

RHYTHM DESIGNER RD-8

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.

We Hear You

behringer