

SDRUM

Strummable Drums™



OWNER'S MANUAL

Warranty

We at DigiTech® are very proud of our products and back up each one we sell with the following warranty:

1. Please register online at digitech.com within ten days of purchase to validate this warranty. This warranty is valid only in the United States.
2. DigiTech warrants this product, when purchased new from an authorized U.S. DigiTech dealer and used solely within the U.S., to be free from defects in materials and workmanship under normal use and service. This warranty is valid to the original purchaser only and is non-transferable.
3. DigiTech liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, provided the product is returned to DigiTech WITH RETURN AUTHORIZATION, where all parts and labor will be covered up to a period of one year. A Return Authorization number may be obtained by contacting DigiTech. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.
4. Proof of purchase is considered to be the responsibility of the consumer. A copy of the original purchase receipt must be provided for any warranty service.
5. DigiTech reserves the right to make changes in design, or make additions to, or improvements upon this product without incurring any obligation to install the same on products previously manufactured.
6. The consumer forfeits the benefits of this warranty if the product's main assembly is opened and tampered with by anyone other than a certified DigiTech technician or, if the product is used with AC voltages outside of the range suggested by the manufacturer.
7. The foregoing is in lieu of all other warranties, expressed or implied, and DigiTech neither assumes nor authorizes any person to assume any obligation or liability in connection with the sale of this product. In no event shall DigiTech or its dealers be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond their control.

NOTE: The information contained in this manual is subject to change at any time without notification. Some information contained in this manual may also be inaccurate due to undocumented changes in the product since this version of the manual was completed. The information contained in this version of the owner's manual supersedes all previous versions.

Technical Support and Service

If you require technical support, contact DigiTech Technical Support. Be prepared to accurately describe the problem. Know the serial number of your device — this is printed on a sticker attached to the chassis. If you have not already taken the time to register your product, please do so now at digitech.com.

Before you return a product to the factory for service, we recommend you refer to this manual. Make sure you have correctly followed installation steps and operating procedures. For further technical assistance or service, please contact our Technical Support Department at (801) 566-8800 or visit digitech.com. If you need to return a product to the factory for service, you **MUST** first contact Technical Support to obtain a Return Authorization Number.

NO RETURNED PRODUCTS WILL BE ACCEPTED AT THE FACTORY WITHOUT A RETURN AUTHORIZATION NUMBER.

Please refer to the Warranty information, which extends to the first end-user. After expiration of the warranty, a reasonable charge will be made for parts, labor, and packing if you choose to use the factory service facility. In all cases, you are responsible for transportation charges to the factory. If the product is still under warranty, DigiTech will pay the return shipping.

Use the original packing material if it is available. Mark the package with the name of the shipper and with these words in red: DELICATE INSTRUMENT, FRAGILE! Insure the package properly. Ship prepaid, not collect. Do not ship parcel post.

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Introduction

Thanks for choosing the DigiTech® SDRUM™ Strummable Drums™ Pedal. The SDRUM is the world's first intelligent drum machine for guitarists and bassists. The SDRUM provides a quick, fun way to create professional-sounding drum patterns for practice sessions, exploring song ideas, recording, and performing.

There are two ways to create drum patterns with the SDRUM: using the pads or using BeatScratch™, a proprietary technology that allows kick/snare patterns to be created by simply scratching the upper and lower strings of an electric guitar, acoustic guitar (with pickup), or bass. This allows the SDRUM to learn drum patterns using a method commonly used by guitar and bass players to explain a beat to a drummer.

Once a kick/snare pattern is created, the "right-hand" drum element (hi-hat, ride, tom, etc.) is automatically added to complement the drum pattern. The right-hand drum element can then be further edited to suit the song.

The SDRUM can learn up to 3 parts per song and store up to 36 songs. Each song and part have various settings that can be adjusted at any time. These include time signature, feel (straight or swing), embellishment amount (how busy the part is), part intensity, tempo, and more.

The SDRUM's drum sounds, from RealiTone™ and Digital Sound Factory®, incorporate samples using multiple velocity layers, for realistic dynamic expression. Tasteful random beat variations, added ghost notes, and humanization keep the drums interesting and provide the feel of a true performance.

The SDRUM offers five drum kits to select from, covering a wide range of genres. Alternate kick/snare sounds are also available for each kit. The drums are internally processed with Lexicon® reverb, so reverb tails decay naturally and are never cut off. All of this means that the SDRUM can generate drum tracks that sound very natural, powerful, organic, and authentic—all with minimal effort and time spent.



Features

- High-quality drum samples with multiple velocity layers, humanization, and minor variations for musical and realistic drum patterns
- 5 drum kits to choose from: E-Pop, Brush, Percussion, Power, and Clean
- Alternate kick and snare sounds for each drum kit
- Select between hi-hat or ride patterns, or select toms, shakers, or other percussion
- Legendary Lexicon™ reverb internally applied to drums
- Select between 3/4 or 4/4 time signatures
- Change the feel (straight or swing) and embellishment amount (simple to busy) for each drum pattern
- Proprietary BeatScratch™ technology allows kick/snare drum patterns to be created by scratching the guitar or bass strings
- Kick and snare pads provide a conventional method for teaching drum patterns
- Adjustable tempo using the variable control or tap tempo
- Built-in metronome and drumstick count-in
- Create up to 3 song parts (verse, chorus, and bridge) and switch between them during playback using the built-in footswitch
- Selectable intensity for each song part for enhanced song dynamics
- Storage for up to 36 songs
- Drum output level control
- 1/4" mono or stereo mixer outputs
- 1/4" amp output
- JamSync™ support for playback synchronization with compatible DigiTech JamMan® Loopers
- SilentClear™ feature prevents moments of brief playback when clearing song parts or songs
- Support for an external DigiTech FS3X Footswitch (optional), with 3 modes of operation
- Soft-touch vacuum-style footswitch
- Included power adapter

Quick Start

To get up and running quickly with the SDRUM, see the SDRUM Quick Start Guide that was included in the box or visit <http://digitech.com/en-US/products/sdrum#documentation>.

Connectors and User Interface

Connectors



1. POWER INPUT Jack

Connect only the included HARMAN power adapter to this jack. See '*Specifications*' on page 36 for power adapter information.

2. JAMSYNC OUT Jack

Connect this jack to DigiTech JamSync-compatible loopers to use them with the SDRUM. See '*Using JamSync*' on page 31 for more information.

3. AMP OUT Jack

Connect this output to the input of the guitar or bass amplifier, or connect it to the input of an effects chain if used. Note that the output jacks are auto-sensing and output functionality will change depending on the outputs connected. See '*Output Jack Operation*' on page 10 for more information.

4. MIXER L/R OUT Jacks

Connect these outputs to the line inputs of a mixer. Note that the output jacks are auto-sensing and output functionality will change depending on the outputs connected. See '*Output Jack Operation*' on page 10 for more information.

5. USB Port

This Mini USB port is used for updating the SDRUM's firmware. See '*Updating Firmware*' on page 35 for more information.

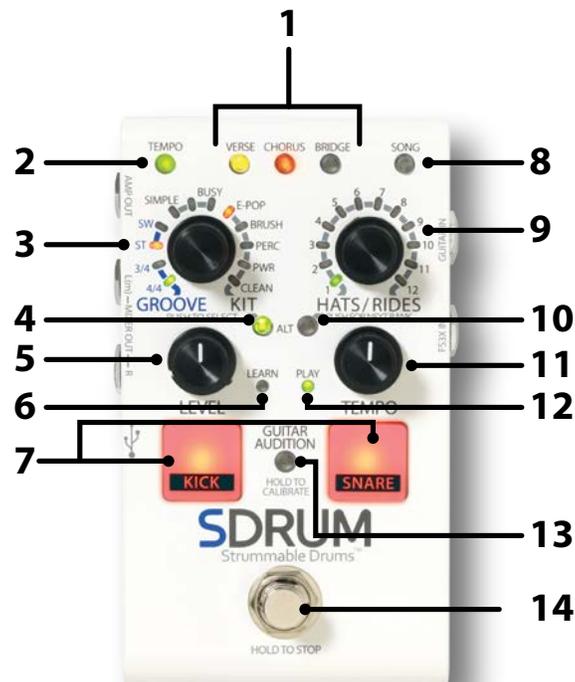
6. GUITAR IN Jack

Connect your guitar to this jack using an unbalanced (TS) instrument cable.

7. FS3X IN Jack

Connect an optional DigiTech FS3X Footswitch to this jack for additional hands-free control. See '*Using an FS3X Footswitch*' on page 33 for more information.

User Interface



1. VERSE/CHORUS/BRIDGE PART Buttons

These PART buttons provide access to the three parts that make up a song, and they serve the following functions:

- **Select a Part** – Press the PART buttons to switch between each of the three song parts.
- **Change Part Intensity** – Once a part is selected, repeatedly press the selected PART button to cycle between the available part intensities (or how loud the part will be played). See '*Changing Song Part Intensities*' on page 22 for more information.
- **Enable the Metronome or Count-In Feature** – When playback is stopped, press and hold the currently selected PART button to enable the metronome (when the selected song part is empty) or count-in feature (when the selected song part contains a drum pattern).

The PART buttons have the following states:

- **LED Off** – The part has not been learned and is not selected.
- **LED Solid Dim (Green, Amber, or Red)** – With an empty song selected (SONG LED off), this state indicates that the part will be automatically created. For example, when a song is cleared, the VERSE LED will light solid bright amber and the CHORUS LED will light solid dim red, indicating that teaching the verse will automatically create a chorus part. When a non-empty song is selected (SONG LED dim), this state indicates that the part has been learned but is not selected.
- **LED Solid Bright (Green, Amber, or Red)** – The part is selected.
- **LED Flashing (Green, Amber, or Red)** – The part has been learned, is selected, and the count-in feature is enabled. The rate of flashing indicates the current tempo of the song. When a part is cleared, the PART button will flash red briefly. When a song is cleared, all three PART buttons will flash red briefly. When a part or song is restored via an undo operation, the buttons will briefly flash green.

2. TEMPO Button

The TEMPO button provides the following functions:

- **Tempo Indication** – When a song part is empty and the metronome is on, or if a song part is not empty, the TEMPO LED will flash at the rate of the current song tempo. The TEMPO LED will light red for the first beat of the bar (during playback), dim green for the subsequent beats, then bright green for the subsequent beats of the last bar. If the tempo of a song is changed, the subsequent beats will light amber instead of green to indicate the change. Note that the TEMPO button can be pressed and held to store the new tempo of the song.
- **Metronome** – With an empty part selected, press and hold the TEMPO button for ~2 seconds to turn the metronome on or off. See *'Using the Metronome' on page 11* for more information.
- **Tap Tempo** – Tap the TEMPO button at the rate of the desired tempo to change the tempo of a song.
- **Update Nominal Tempo** – If the tempo of a song is altered using the TEMPO button or TEMPO knob, it will not be automatically stored to the song. To store the updated tempo, press and hold the TEMPO button for ~2 seconds. This will store the new tempo setting as the nominal (center detent TEMPO knob) setting.

See *'Adjusting the Tempo' on page 21* for more information.

3. GROOVE/KIT Encoder

Turn then press this encoder to change the drum timing, feel, embellishment amount, and kit. The following options are available:

- **Timing** – The first two settings select between 3/4 or 4/4 time signatures.
- **Feel** – The next two settings select between a straight (ST) or swing (SW) feel.
- **Embellishment Amount** – The next three LEDs select how simple or busy the drum part will be.
- **Kit** – The remaining LEDs select between the five available drum kits. See *'Selecting the Drum Kit' on page 17* for more information.

4. ALT Button (Kick/Snare)

Press this button to select alternate voicings for the kick and snare:

- **LED Off** – Standard Voicing
- **LED Green** – Alternate Voicing

The alternate voicings are different for each drum kit. See *'Selecting Alternate Sounds for the Kick/Snare' on page 18* for more information.

5. LEVEL Knob

This knob adjusts the output level of the drums. Adjust this knob to match the level of the drums to the guitar.

6. LEARN LED

This LED indicates the following functionality:

- **Slowly Flashing Red** – Indicates an empty song part is selected.
- **Rapidly Flashing Red** – Indicates the SDRUM is armed for learning and will begin learning the drum pattern once the KICK/SNARE pads are played, the guitar is scratched, or the FOOTSWITCH is pressed.
- **Solid Red** – Indicates the SDRUM is learning the drum pattern.

7. KICK/SNARE Pads

When the SDRUM is armed to learn, tapping these pads provides a traditional method for teaching drum patterns. They can also be used when using the SDRUM with an instrument that doesn't have a pickup. See *'Teaching Drum Patterns with the Kick and Snare Pads'* on page 12 for more information.

8. SONG Button

Press this button and turn the HATS/RIDES encoder to select a different song. Song selections are displayed on the LEDs surrounding the HATS/RIDES encoder. Turn the HATS/RIDES encoder to select a song from one of the three banks (green, amber or red LEDs), then press the SONG button or HATS/RIDES encoder to load the song. See *'Managing Songs'* on page 24 for more information on creating, loading, and copying songs.

9. HATS/RIDES Encoder

Turn this encoder to select a different variation on how the right-hand drum element is played. Press this encoder to select between different sub-beat timing options for the right-hand drum element. See *'Selecting Right-Hand Drum Elements'* on page 19 for more information on the available options and using the HATS/RIDES encoder.

10. ALT Button (Hats/Rides)

Press this button to select alternate voicings for the right-hand drum element:

- **LED Off** – Standard Voicing
- **LED Green** – Alternate Voicing 1
- **LED Red** – Alternate Voicing 2

The alternate voicings are different for each drum kit. See *'Selecting Alternate Sounds for Right-Hand Drum Elements'* on page 20 for more information.

11. TEMPO Knob

Turn this knob to change the tempo of the song. The tempo range is from half-speed (fully counter-clockwise) to double speed (fully clockwise). To store the changed tempo of a song, press and hold the TEMPO button for ~2 seconds. The center detent position of the TEMPO knob represents the tempo stored to a song.

NOTE: Whenever the tempo is changed without directly using the TEMPO knob—for example, when teaching a new drum pattern, loading a new song, or using tap tempo—the TEMPO knob may need to be moved back to the center detent position before it becomes active again. This prevents sudden tempo changes if the knob is nudged when the current position does not match the current tempo.

See *'Adjusting Tempo Using the Tempo Knob'* on page 21 for more information.

12. PLAY LED

This LED indicates the following functionality:

- **LED Off** – Indicates the selected song part is empty.
- **LED Dim Green** – Indicates the selected song part contains a drum pattern and playback is stopped.
- **LED Bright Green** – Indicates the SDRUM is playing the song.
- **LED Flashing** – The PLAY LED flashes along with the KICK and SNARE pads when the FOOTSWITCH is held down to stop playback.

13. GUITAR AUDITION Button

Press this button to cycle through the Guitar Audition modes. Press and hold this button to calibrate BeatScratch for a guitar (see *'Teaching Drum Patterns with a Guitar or Bass'* on page 13 for more information on calibrating BeatScratch). This button has three states:

- **Off (LED Off)** – The guitar will be heard when played.
- **Hybrid (LED Dim)** – When an empty song part is selected, kick/snare sounds will be heard when scratching the guitar so that BeatScratch can be used. When a song part that contains a drum pattern is selected, the guitar will be heard when played so that you can play along with the drums.
- **On (LED Bright)** – Kick/snare sounds will always be heard when scratching the guitar.

NOTE: The Guitar Audition feature will be automatically enabled (LED bright) after calibrating BeatScratch. After creating a drum pattern, the Guitar Audition feature will be automatically set to "Hybrid" mode (LED dim).

14. FOOTSWITCH

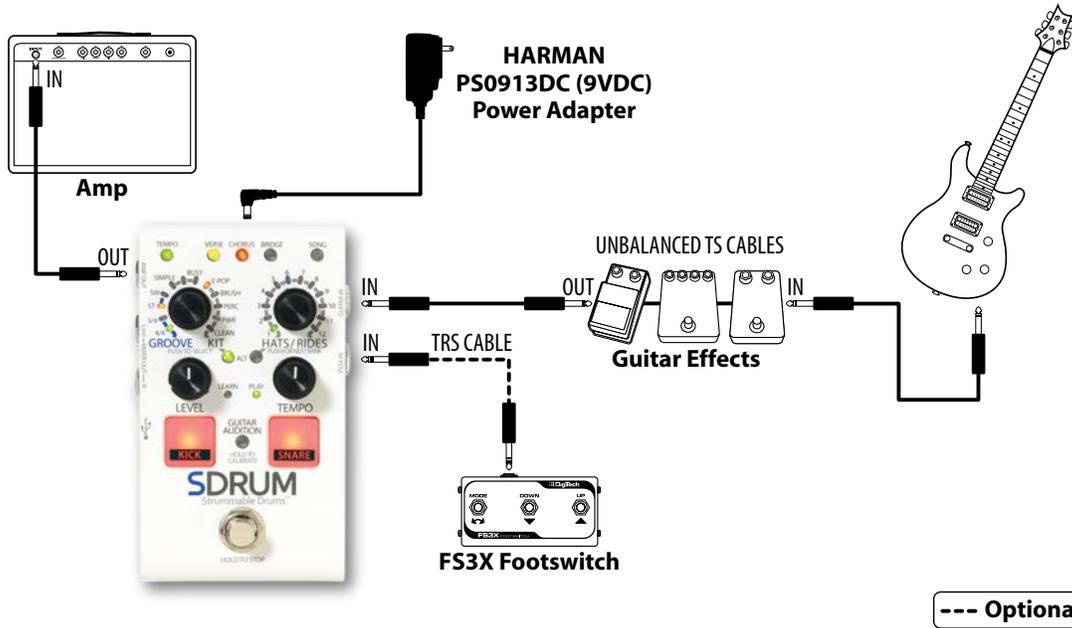
This footswitch provides the following functions:

- **Arm for Learning** – When an empty song part is selected, press the FOOTSWITCH once to arm the SDRUM to learn a new drum pattern (LEARN LED will flash rapidly). Play the part, or press the FOOTSWITCH again to force the SDRUM to begin learning the new drum pattern.
- **Start Playback** – When playback is stopped and a song part is learned and selected, press the FOOTSWITCH once to begin song playback.
- **Stop Playback** – During playback, press and hold the FOOTSWITCH for ~2 seconds (or until the KICK and SNARE pads begin flashing rapidly) to stop playback. Release the FOOTSWITCH as soon as the KICK and SNARE pads begin flashing to stop the song without a sustaining crash cymbal. Continue holding the FOOTSWITCH to end a song with a sustaining crash cymbal. Note that the cymbal crash will decay naturally until the FOOTSWITCH is released or the sustain rings out.
- **Clear a Part and Undo** – When playback is stopped, press and hold the FOOTSWITCH for ~2 seconds (or until the selected PART button begins to flash rapidly), then release. The selected song part will now be empty. Immediately press and hold the FOOTSWITCH again for ~2 seconds to restore the cleared part.
- **Clear a Song and Undo** – When playback is stopped, press and hold the FOOTSWITCH for ~4 seconds (or until all PART buttons begin to flash rapidly), then release. All parts of the song will now be empty. Immediately press and hold the FOOTSWITCH again for ~2 seconds to restore the cleared song.

NOTE: The currently selected part will be cleared first when clearing a song, but as long as the FOOTSWITCH continues to be held, then all song parts will be cleared at once.

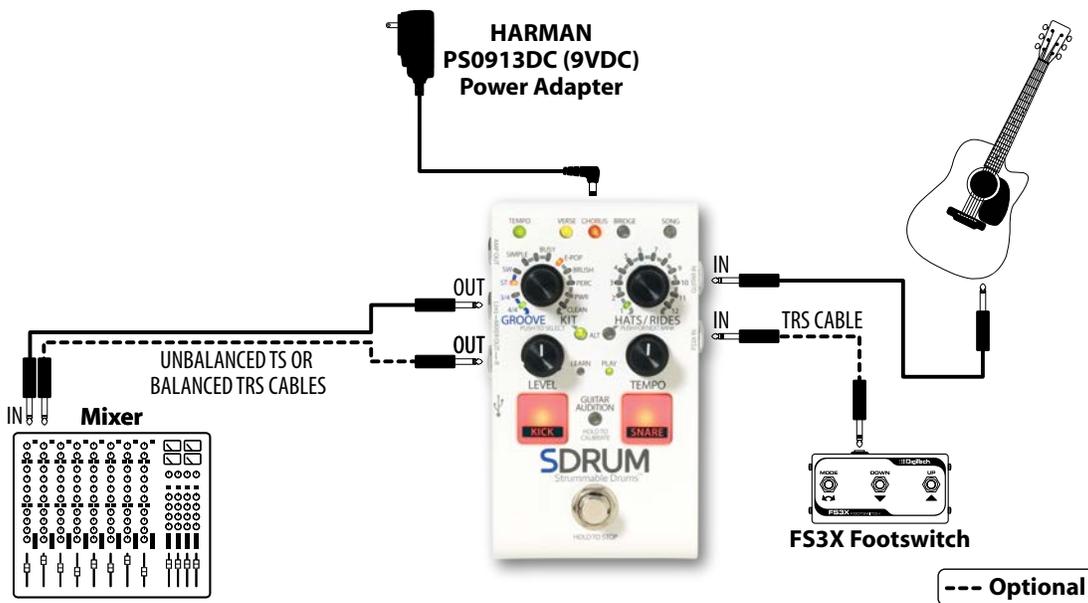
Connection Diagrams

Amplifier Setup



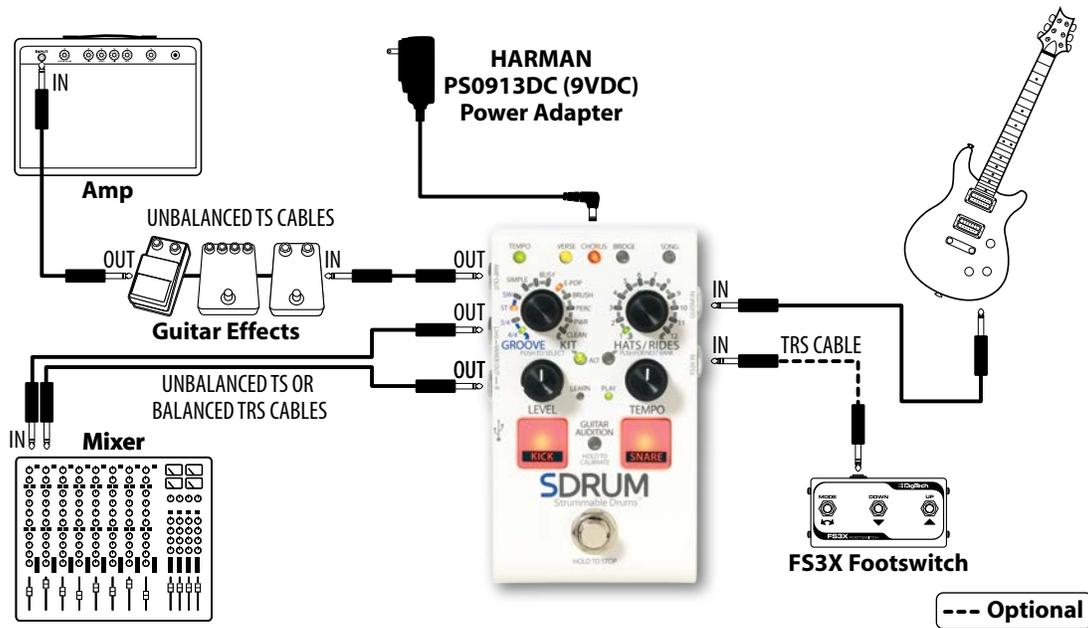
NOTE: When only the AMP OUT jack is used, the drum signal will be processed to make the drums sound better when played through a guitar amp. See *'Output Jack Operation'* on page 10 for more information. If using guitar effects and/or a looper in this type of application, they should be placed before the SDRUM so they do not affect the drum signal. Note that the effects may need to be bypassed to use BeatScratch.

Mixer Setup



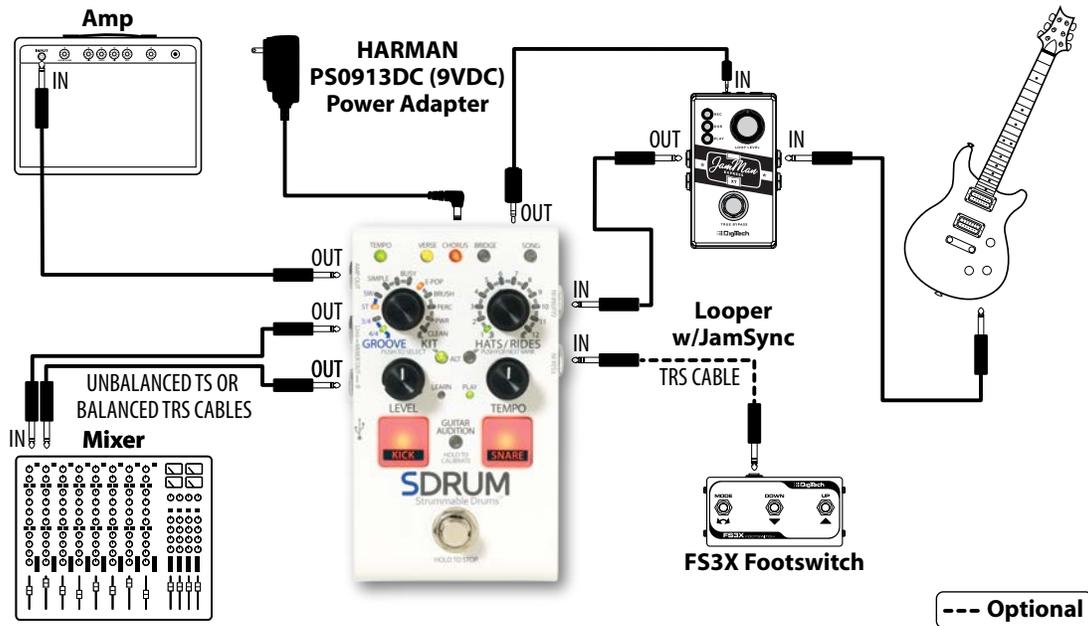
NOTE: When only the MIXER OUT jacks are used, the mono guitar signal and stereo drum signal are fed to the MIXER OUT jacks. This setup works well for applications where an acoustic guitar with a pickup or a bass guitar are connected to a live PA system. See *'Output Jack Operation'* on page 10 for more information.

Amplifier + Mixer Setup



NOTE: When connected to both the MIXER and AMP OUT jacks, the guitar signal will be fed to the AMP OUT jack and the drum signal will be fed to the MIXER OUT jacks. See '*Output Jack Operation*' on page 10 for more information. If using guitar effects, they can be placed before the SDRUM or between the SDRUM and amp in this type of application. Note that if the effects are placed before the SDRUM, they may need to be bypassed to use BeatScratch.

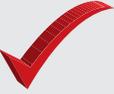
JamSync Setup



NOTE: The looper should be placed before the SDRUM in most cases, such as when using only the AMP OUT jack. If using the AMP and MIXER OUT jacks, the looper can also be placed between the SDRUM and amp if desired. See '*Using JamSync*' on page 31 for information on using the SDRUM in a JamSync setup.

Output Jack Operation

The output jacks have an auto-sensing feature that allows the SDRUM to automatically optimize the outputs for the application. The table below describes how the SDRUM will operate depending on which outputs are connected.

AMP OUT Jack Connected	MIXER OUT Jacks Connected	Operation Description
		<p>A mono mix of the guitar and drum signal will be sent to the AMP OUT jack. Complementary equalization will be applied to the drum signal to make it sound better when played through a guitar amp.</p> <p>NOTE: When using a guitar amp to play the drums from the SDRUM, set the amp to run as cleanly as possible in order to avoid distorting the drums. The drums are pre-EQ'd to sound best through a clean amp with "flat" EQ settings. If using guitar effects and/or a looper, they should be placed before the SDRUM when using only the AMP OUT jack.</p>
		<p>The drum and guitar signals will be mixed and sent to the MIXER OUT jacks. If only the left (mono) MIXER OUT jack is connected, the guitar/drum mix will be mono. If the left and right MIXER OUT jacks are connected, the guitar signal will be mono and the drum signal will be stereo.</p> <p>NOTE: The SDRUM does not apply cabinet simulation to the guitar signal. This allows an acoustic or bass guitar to be used when only the MIXER OUT jacks are connected.</p>
		<p>The guitar signal will be fed to the AMP OUT jack only. The drum signal will be sent to the MIXER OUT jacks in mono (if only the MIXER OUT L jack is used) or stereo (if both MIXER OUT jacks are used). If using guitar effects and/or a looper, they can be placed before or after the SDRUM when using both the AMP OUT and MIXER OUT jacks.</p>

Making Connections and Applying Power

To connect the SDRUM pedal:

1. Turn down the guitar amp. If connecting to a mixer, turn down the gain/trim controls and lower the faders on the channels to which you are connecting.
2. Make all connections to the SDRUM as shown in '*Connection Diagrams*' on page 8.
3. Connect the included HARMAN power adapter to the SDRUM POWER input connector, then connect the other end to an available AC outlet and wait for the SDRUM to boot.
4. Turn the guitar volume all the way up, strum the guitar, and then gradually increase the guitar amp volume until the desired level is achieved. If using a mixer, set the channel faders to unity (0), then raise the gain/trim controls while tapping the **KICK/SNARE** pads for the desired level. Set the **LEVEL** knob to 12 o'clock.

Teaching Drum Patterns

The SDRUM allows drum patterns to be created in one of two ways: using BeatScratch to naturally scratch drum patterns with a guitar or bass, or using the KICK and SNARE pads, which also allows the SDRUM to be used with other instruments that don't have a pickup.

When teaching a new drum pattern, the SDRUM will automatically determine the time signature and feel (straight or swing) settings. Once a new drum pattern has been taught, the detected time signature and feel settings will be reflected on the LEDs surrounding the KIT/GROOVE encoder. The KIT/GROOVE encoder can then be used to change the time signature and feel manually if desired.

TIP: If required, the automatic time signature/feel detection of the SDRUM can be overridden and a pre-determined time signature and/or feel can be pre-selected before teaching a new drum pattern. See '*Pre-Selecting Timing and Feel Settings*' on page 28 for more information.

By default, when teaching the SDRUM a new song, the verse is selected as the active part and, once the verse drum pattern is learned, the chorus part is automatically generated with drums having the same kick/snare pattern as the verse, but with a higher intensity and a cymbal pattern instead of the default hi-hats. This behavior is indicated on the user interface with the VERSE LED lighting solid bright amber and the CHORUS LED lighting solid dim red.

This means that by teaching a single drum pattern for the verse part, you then have drum patterns for two song parts, allowing you to instantly start exploring song ideas. If you prefer, you can overwrite the automatically generated chorus drum pattern with your own, disable the chorus part (CHORUS LED off) before teaching the verse part, or automatically generate a bridge part as well when the verse part is created (see '*Automatically Generating a Bridge Drum Pattern*' on page 27).

Using the Metronome

The built-in metronome can be used to improve timing and avoid unexpected results when teaching a new drum pattern, as well as to match the tempo of all parts that make up a song. The metronome is automatically enabled whenever at least one song part has been learned and an empty song part is selected.

To enable/disable the metronome:

1. Select an empty song part (the **LEARN** LED should be flashing).
2. Press and hold the **TEMPO** button for ~2 seconds to enable/disable the metronome. The **TEMPO** button will also flash at the rate of the metronome to provide visual tempo indication.

TIP: Pressing and holding the currently selected **PART** button when the part is empty provides an alternate way to enable/disable the metronome.

TIP: The tempo can be changed before teaching the new drum part by either tapping in the desired tempo on the **TEMPO** button or by turning the **TEMPO** knob.

NOTE: The default BPM for an empty song is 120. The SDRUM always plays back at an integer BPM, making it easier to match the BPM of an external device or DAW.

NOTE: In a song where at least one part has already been learned, the metronome will automatically be enabled when an empty part is selected.

Teaching Drum Patterns with the Kick and Snare Pads

The KICK and SNARE pads on the SDRUM can be used to teach drum patterns in a more traditional manner or when playing an instrument without a pickup.

To teach a drum pattern with the KICK and SNARE pads:

1. Ensure an empty song part (**VERSE**, **CHORUS**, or **BRIDGE**) is selected. The **LEARN** LED will flash if the selected part is empty.

TIP: When an empty song is selected (**SONG** LED off), the **VERSE** LED will light solid bright amber and the **CHORUS** LED will light solid dim red. This indicates that teaching the verse will automatically generate a chorus part. If you wish to create a custom pattern for the chorus part instead, disable the automatic part generation feature before teaching the SDRUM by pressing the **CHORUS** button repeatedly until the **CHORUS** LED turns off. Note that the automatically generated chorus part can also be cleared and a new pattern taught after teaching the SDRUM if preferred.

For information about automatically generating a bridge drum pattern along with the verse and chorus, see '*Automatically Generating a Bridge Drum Pattern*' on page 27.

2. If desired, enable the metronome by pressing and holding the **TEMPO** button for ~2 seconds. Set the tempo by tapping the **TEMPO** button at the desired rate or by turning the **TEMPO** knob.
3. Press the **FOOTSWITCH** to arm the SDRUM. The **LEARN** LED will begin flashing rapidly to indicate the SDRUM is armed.
4. Begin playing the drum pattern on the **KICK** and **SNARE** pads.

TIP: Alternatively, press the **FOOTSWITCH** to start learning without needing a pad hit. The **LEARN** LED will light solid red, indicating that the SDRUM is learning. This can be useful for certain music styles that incorporate drum patterns that have no kick or snare hit on the first downbeat of the bar, such as reggae.

NOTE: When creating a new drum pattern, the maximum length cannot exceed 4 bars.

5. Press the **FOOTSWITCH** when done. For best results, try to press the **FOOTSWITCH** on the same downbeat you started on (beat 1).
6. The drum pattern will begin playing. Play the guitar and adjust the **LEVEL** knob for a good blend between the guitar and drums.
7. To stop playback, press and hold the **FOOTSWITCH** for ~2 seconds (until the **KICK** and **SNARE** pads begin flashing). Releasing the **FOOTSWITCH** as soon as the **KICK/SNARE** pads begin flashing will stop playback. Continuing to hold the **FOOTSWITCH** will cause a crash cymbal to play at the end of the current bar and ring out for as long as the **FOOTSWITCH** is held.

TIP: The SDRUM offers some advanced features that can enhance SDRUM operation when creating a drum pattern. See '*Advanced Features and Tips*' on page 27 for more information on the options available and how to use them.

Teaching Drum Patterns with a Guitar or Bass

The all-new BeatScratch feature allows a guitar or bass to be used to teach the SDRUM a drum pattern. When doing so, the SDRUM should first be calibrated for the connected guitar/bass.

To calibrate BeatScratch for a guitar/bass:

1. Adjust the guitar/bass pickup position and tone control for the desired tone.
2. Press and hold the **GUITAR AUDITION** button for ~2 seconds. The **KICK** pad will begin flashing and the **HATS/RIDES** LEDs will all turn red. Keep the guitar/bass quiet until you're ready to begin the calibration process.
3. Mute the strings with your fret hand, then strum only the low strings in the way that you wish to teach kick drum hits. With each detected hit, the **HATS/RIDES** LEDs will go off one by one. Stop once all twelve kick events have been received (all the **HATS/RIDES** LEDs will go off, the **SNARE** pad will begin flashing, and the **HATS/RIDES** LEDs will all light red again).
4. Mute the strings with your fret hand, placing your hand in the same position on the neck used for the kick calibration, then strum only the high strings in the way that you wish to teach snare drum hits. With each detected hit, the **HATS/RIDES** LEDs will go off one by one. Once twelve snare events have been received (all the **HATS/RIDES** LEDs have gone off), the SDRUM will exit calibration mode.
5. Once calibration is complete, scratching the guitar/bass will generate kick and snare sounds.

NOTE: Calibration settings are retained, even after a power cycle.

TIP: If playing bass, try using a pick if fingering or plucking the strings is not working. Feel free to experiment with different ways of teaching the SDRUM to discover what works best with your instrument and teaching style. Some bass players have found that slapping the lowest string and popping the highest string works well.

To teach a drum pattern with a guitar/bass:

1. If the guitar/bass has not yet been calibrated to use BeatScratch, first follow the calibration instructions above before proceeding.
2. Ensure an empty song part (**VERSE**, **CHORUS**, or **BRIDGE**) is selected. The **LEARN** LED will flash if the selected part is empty.

TIP: When an empty song is selected (**SONG** LED off), the **VERSE** LED will light solid bright amber and the **CHORUS** LED will light solid dim red. This indicates that teaching the verse will automatically generate a chorus part. If you wish to create a custom pattern for the chorus part instead, disable the automatic part generation feature before teaching the SDRUM by pressing the **CHORUS** button repeatedly until the **CHORUS** LED turns off. Note that the automatically generated chorus part can also be cleared and a new pattern taught after teaching the SDRUM if preferred.

For information about automatically generating a bridge drum pattern along with the verse and chorus, see '*Automatically Generating a Bridge Drum Pattern*' on page 27.

3. If desired, enable the metronome by pressing and holding the **TEMPO** button for ~2 seconds. Set the tempo by tapping the **TEMPO** button at the desired rate or by turning the **TEMPO** knob.
4. Press the **FOOTSWITCH** to arm the SDRUM. The **LEARN** LED will begin flashing rapidly to indicate the SDRUM is armed.
5. Begin playing the drum pattern by scratching the guitar/bass.

TIP: Alternatively, press the **FOOTSWITCH** to manually initiate SDRUM learning. The **LEARN** LED will light solid red, indicating the SDRUM is learning. This can be useful for certain music styles that incorporate drum patterns that have no kick or snare hit on the first downbeat of the bar, such as reggae.

NOTE: When creating a new drum pattern, the maximum length cannot exceed 4 bars.

6. Press the **FOOTSWITCH** when done. For best results, try to press the **FOOTSWITCH** on the same downbeat you started on (beat 1).
7. To stop playback, press and hold the **FOOTSWITCH** for ~2 seconds (until the **KICK** and **SNARE** pads begin flashing). Releasing the **FOOTSWITCH** as soon as the **KICK/SNARE** pads begin flashing will stop playback. Continuing to hold the **FOOTSWITCH** will cause a crash cymbal to play at the end of the current bar and ring out for as long as the **FOOTSWITCH** is held.

TIP: The SDRUM offers some advanced features that can enhance SDRUM operation when teaching drum patterns. See '*Advanced Features and Tips*' on page 27 for more information on the options available and how to use them.

Selecting Drum Pattern Settings

Selecting the Time Signature

The SDRUM has two time signature settings to select from: 3/4 and 4/4. The time signature can be changed on a single song part or for an entire song.

To change the time signature of parts:

1. Select the song part using the **VERSE**, **CHORUS**, or **BRIDGE** button.
2. Turn the **GROOVE/KIT** encoder to select the new time signature.
3. Press the **GROOVE/KIT** encoder to make the selection. To change the time signature setting for all song parts, press and hold the **GROOVE/KIT** encoder for ~2 seconds (until the selected time signature LED flashes three times).

TIP: The time signature setting can also be pre-selected before teaching the SDRUM a drum pattern. See '*Pre-Selecting Timing and Feel Settings*' on page 28 for more information.

Selecting the Feel

The SDRUM offers two feel settings to select from: straight (ST) or swing (SW). The feel can be changed on a single song part or for an entire song.

To change the feel of parts:

1. Select the song part using the **VERSE**, **CHORUS**, or **BRIDGE** button.
2. Turn the **GROOVE/KIT** encoder to select the new feel setting.
3. Press the **GROOVE/KIT** encoder to make the selection. To change the feel setting for all song parts, press and hold the **GROOVE/KIT** encoder for ~2 seconds (until the selected feel LED flashes three times).

TIP: The feel setting can also be pre-selected before teaching the SDRUM a drum pattern. See '*Pre-Selecting Timing and Feel Settings*' on page 28 for more information.

Selecting the Embellishment Amount

The embellishment amount setting determines how simple or busy the drum pattern will be. The SDRUM has three embellishment amount settings: SIMPLE, INTERMEDIATE, and BUSY.

Embellishment Amount Setting	Description
SIMPLE	With this option selected, only the kick/snare (or equivalent) drum elements that were taught to the part will be played (there will be no added ghost notes or extra drum hits).
INTERMEDIATE	With this option selected, some ghost notes and occasional extra drum hits will be added to keep the drum pattern interesting.
BUSY	With this option selected, a pattern will be more complex with extra notes being added to the kick/snare and variation patterns.

The embellishment amount setting can be changed on a single song part or for an entire song.

To change the embellishment amount of parts:

1. Select the song part using the **VERSE**, **CHORUS**, or **BRIDGE** button.
2. Turn the **GROOVE/KIT** encoder to select the new embellishment amount setting.
3. Press the **GROOVE/KIT** encoder to make the selection. To change the embellishment amount setting for all song parts, press and hold the **GROOVE/KIT** encoder for ~2 seconds (until the selected embellishment amount LED flashes three times).

Selecting the Drum Kit

The SDRUM offers five drum kits to choose from:

Drum Kit	Description
E-POP	This kit is made from synthesized drum sounds that emulate analogue drum machines.
BRUSH	This is a vintage-sounding kit played with brushes, for jazz and folk music styles. This kit also includes shaker and tambourine samples.
PERCUSSION	This kit is an augmented clean drum kit with a cowbell, clave, timbales, and congas. It is designed for latin fusion music styles.
POWER	This is a drum kit designed for hard rock, metal, and punk music styles, with a more aggressive sound than the clean kit.
CLEAN	This is a clean drum kit, suitable for rock, pop, and country music styles.

All kits, with the exception of E-Pop, feature multiple velocity layers for all main drums (kick, snare, hi-hats, toms, cymbals). This means that different samples are used depending on how loud each drum is played, which allows sampled drums to sound much more realistic. E-Pop is an exception because synthesized drum machines do not typically alter the tone of a drum based on velocity.

The drum kit can be changed on a single song part or for an entire song.

To change the drum kit on parts:

1. Select the song part using the **VERSE**, **CHORUS**, or **BRIDGE** button.
2. Turn the **GROOVE/KIT** encoder to select the new drum kit setting.
3. Press the **GROOVE/KIT** encoder to make the selection. To change the drum kit setting for all song parts, press and hold the **GROOVE/KIT** encoder for ~2 seconds (until the selected kit LED flashes three times).

TIP: The drum kit setting can be changed before or after teaching a new pattern.

Selecting Alternate Sounds for the Kick/Snare

The following table shows the alternate kick and snare sounds available for each drum kit:

Drum Kit	ALT Button (Groove/Kit)	
	LED Off	LED Green
E-POP	Electronic-Pop Kick 1 and Snare 1	Electronic-Pop Kick 2 and Snare 2
BRUSH	Brush Kick and Snare	Brush Kick and Tambourine
PERCUSSION	Low Timbale and High Timbale	Percussion Kick and Snare
POWER	Power Kick 1 and Snare 1	Power Kick 2 and Snare 2
CLEAN	Clean Kick and Snare	Clean Kick and Sidestick

To select alternate sounds for the kick and snare:

1. Select the song part using the **VERSE**, **CHORUS**, or **BRIDGE** button.
2. Press the **ALT** button next to the **GROOVE/KIT** encoder to toggle between the options listed in the table above.
3. Repeat for other song parts, if desired.

Selecting Drum Pattern Settings

Selecting Right-Hand Drum Elements

The right-hand element (hi-hat, ride, tom, etc.) of each drum pattern can be selected using the HATS/RIDES encoder and ALT button next to the HATS/RIDES encoder. The following table shows some well-known right-hand drum patterns and the settings to select to achieve each.

HATS/RIDES ALT Button Setting	Drum Kit Setting	Timing	Feel	HATS/RIDES Encoder Setting	Right-Hand Pattern Description
LED Off (Hats)	Any	3/4 or 4/4	Straight	#11 (Green LED)	Off-beat open hats (the "Disco" beat)
	Any	4/4	Straight	#6 (Amber LED)	Guiro rhythm
	Any	4/4	Straight	#2 (Red LED)	Mozambique rhythm
	PERC	4/4	Straight	#1 (Green LED)	3-2 Clave
	PERC	4/4	Straight	#10 (Red LED)	2-3 Clave
	BRUSH	4/4	Straight or Swing	#2 (Any Color LED)	Brush swirl with pedal hats
LED Green (Cymbals)	Any	4/4	Straight	#11 (Green LED)	Even crashes
	Any	4/4	Straight	#5 (Red LED)	Off-beat hi-hat pedal with ride
	Any	4/4	Straight	#10 (Red LED)	Ride bell gallop rhythm
	Any	4/4	Straight	#4 (Amber LED)	Typical jazz cymbal pattern

See the next page for information on changing the right-hand drum element settings.

Selecting Drum Pattern Settings

Selecting Sub-Beat Timing and Variation for Right-Hand Drum Elements

Turning the HATS/RIDES encoder selects different variations of the right-hand drum performance. Pressing the HATS/RIDES encoder selects between the available sub-beat timing options. The color of the LEDs surrounding the HATS/RIDES encoder indicate the sub-beat timing option selected for the right-hand drum element, with the following options available:

- **LED Green** – The right-hand drum element is played using mostly quarter notes.
- **LED Amber** – The right-hand drum element is played using mostly eighth notes.
- **LED Red** – The right-hand drum element is played using mostly sixteenth notes.

To change the sub-beat timing for the right-hand drum element:

1. Press the **HATS/RIDES** encoder. Each press of the encoder will toggle through the options and colored LEDs shown in the list above.

To select a different performance variation of the right-hand drum element:

1. Turn the **HATS/RIDES** encoder.

TIP: The HATS/RIDES encoder can be turned to the selection between 12 and 1 (all LEDs off). When this option is selected, no right-hand drum elements will be played in the drum pattern.

Selecting Alternate Sounds for Right-Hand Drum Elements

The following table shows the alternate right-hand drum sounds available for each drum kit:

Drum Kit	ALT Button (Hats/Rides)		
	LED Off	LED Green	LED Red
E-POP	Hi-Hats	Ride/Crash Cymbal	Tom and Percussion
BRUSH	Hi-Hats	Ride/Crash Cymbal	Shakers/Tambourine
PERCUSSION	Percussion	Shakers/Tambourine	Toms
POWER	Hi-Hats	Ride/Crash Cymbal	Toms
CLEAN	Hi-Hats	Ride/Crash Cymbal	Toms

To select alternate sounds for the hats/rides:

1. Select the song part using the **VERSE**, **CHORUS**, or **BRIDGE** button.
2. Press the **ALT** button next to the **HATS/RIDES** encoder to toggle between the options listed in the table above.
3. Repeat for other song parts, if desired.

Adjusting the Tempo

The tempo of a song can be adjusted either before or after teaching the SDRUM, and it can be adjusted using the TEMPO button (tap tempo) or TEMPO knob.

After a part has been learned, or if the metronome feature is enabled, the TEMPO button will flash at the current tempo of the song. The TEMPO button will flash red on the first beat of each bar (only during playback) and green for the remaining quarter note beats if the tempo of the song has not been edited. If the tempo has been edited from the song's stored value, the TEMPO button LED will flash amber instead of green. If the tempo is changed by some mechanism other than the TEMPO knob (e.g., using tap tempo or loading a new song), then the TEMPO knob will not function until it is turned past the center detent (stored) position.

When a part is being played, during the last bar of the part, the TEMPO button will flash brighter to indicate that the drum pattern loop is coming around to the beginning.

Adjusting Tempo Using the Tempo Button

To adjust a song's tempo with the TEMPO button:

1. Play the song.
2. Tap in the desired tempo on the **TEMPO** button.
3. The **TEMPO** button will now flash amber, indicating that the new tempo differs from that stored with the song.

TIP: To restore the original tempo, rotate the **TEMPO** knob a quarter turn above or below the center detent position and then return it to the detent position.

4. Press and hold the **TEMPO** button for ~2 seconds to store the new tempo setting to the song. The **TEMPO** LED will again flash green to indicate this is the song's stored tempo (center detent position on the **TEMPO** knob).

Adjusting Tempo Using the Tempo Knob

The TEMPO knob's center detent position represents a tempo multiplier of 1X, which is the original tempo of the learned song part. The full clockwise position provides a tempo of 2X the learned tempo and the full counter-clockwise position provides a multiplier of 1/2X the learned tempo.

To adjust a song's tempo with the TEMPO knob:

1. Play the song.
2. Turn the **TEMPO** knob to change the tempo. Note that the **TEMPO** knob may have to be turned past the center detent position before changes will be made. The **TEMPO** button will now flash amber, indicating that the new tempo differs from that stored with the song.

TIP: To restore the original tempo, rotate the **TEMPO** knob back to the center detent position..

3. Press and hold the **TEMPO** button for ~2 seconds to store the new tempo setting to the song. The **TEMPO** LED will again flash green to indicate this is the song's stored tempo (center detent position on the **TEMPO** knob).

Using Song Parts

The SDRUM's three song parts (verse, chorus, and bridge) make up a song. Each part can be programmed for lower or higher intensity to add dynamics to the song. Learned parts are automatically stored to memory until cleared, even after a power cycle.

Changing Song Part Intensities

The intensity of each song part can be changed to create song dynamics for a more energetic performance.

There are three part intensities available:

Part LED	Description
Green 	Low Intensity
Amber 	Medium Intensity
Red 	High Intensity

To change the intensity of a song part:

1. Select the part to edit by pressing the **VERSE**, **CHORUS**, or **BRIDGE** button (the LED that is brightest indicates selection).
2. Press the selected **PART** button repeatedly to cycle intensity selection.

Playing and Switching between Song Parts

To play and switch between song parts:

1. Select the first part to be played using the **PART** (**VERSE**, **CHORUS**, and **BRIDGE**) buttons.
2. Tap the **FOOTSWITCH** to start playing the song part.
3. While the song is playing, tap the **FOOTSWITCH** to advance to the next part, or press one of the **PART** buttons to cue another part to be played. The cued **PART** button will flash at its learned tempo, a drum fill will be played, then the next part will begin playing at the start of the next bar. The optional FS3X Footswitch can also be used to switch song parts. See *'Using an FS3X Footswitch' on page 33* for more information.

TIP: Press the **FOOTSWITCH** twice to skip a part—for example, to go from playing part 1 (the verse) to part 3 (the bridge). To play a drum fill but stay on the current part, tap the **FOOTSWITCH** repeatedly until the current part is selected again.

Stopping Playback and Ending a Song

To stop song playback:

1. During playback, press and hold the **FOOTSWITCH** for ~2 seconds (or until the **PLAY** LED and **KICK/SNARE** pads begin flashing).
2. Release the **FOOTSWITCH** as soon as the **PLAY** LED and **KICK/SNARE** pads begin flashing to stop playback immediately. Or, continue to hold the **FOOTSWITCH** to finish the bar and then end the song with a crash cymbal. Keep the **FOOTSWITCH** held to allow the crash cymbal to decay naturally.

Clearing a Song Part

To clear a song part:

1. Stop playback by pressing and holding the **FOOTSWITCH** for ~2 seconds (or until the **PLAY** LED and **KICK/SNARE** pads begin flashing).
2. Select the part to clear by pressing the **VERSE**, **CHORUS**, or **BRIDGE** button. The brightest LED indicates the part selected.
3. Press and hold the **FOOTSWITCH** for ~2 seconds (or until the currently selected **PART** button flashes red rapidly), then release. The **LEARN** LED will begin flashing slowly, indicating the part is empty. Make sure to release the **FOOTSWITCH** as soon as the current **PART** LED begins flashing, as holding the **FOOTSWITCH** down for ~4 seconds will clear the entire song.

TIP: A part can be restored as long as the SDRUM has not been power cycled or any other operations performed since the part was cleared.

To restore a part after clearing it, immediately press and hold the **FOOTSWITCH** for ~2 seconds (or until the currently selected **PART** button flashes green rapidly), then release. The **LEARN** LED will go off and the **PLAY** LED will light to indicate the part is again available.

TIP: If the SilentClear feature is enabled, song parts can be cleared without momentarily initiating playback. See '*Enabling Count-In and SilentClear*' on page 27 for more information.

NOTE: When a part is cleared, if the song still contains at least one learned song part, a metronome will begin playing at the tempo of the last played song tempo, making it easy to match the tempo of all song parts.

Managing Songs

The SDRUM can store up to 36 songs with up to 3 parts each. Songs are automatically stored in real time. The following sections describe how to create, load, copy, and clear songs.

WARNING: To ensure that song data is not unexpectedly lost, always stop SDRUM playback and wait at least 5 seconds, without making any song changes, before powering down the pedal.

The following parameters are stored in the SDRUM:

- Song data
- Last user interface settings before power down
- Last used FS3X Footswitch mode

Creating a New Song

To create a new song:

1. Press the **SONG** button to enter song mode. The **SONG** LED will begin flashing green and the current song selection will be indicated with a brightly lit LED around the **HATS/RIDES** encoder. All other LEDs will turn off except for the **SONG** button and **HATS/RIDES** LEDs when song mode is active.
2. Turn the **HATS/RIDES** encoder to select an empty song (empty songs are indicated by an LED that is not yet lit).

TIP: Continue turning the **HATS/RIDES** encoder beyond the 12 and 1 selections to toggle through the three song banks: bank 1 (green LEDs), bank 2 (amber LEDs), and bank 3 (red LEDs).

3. Press the **SONG** button or **HATS/RIDES** knob to confirm the selection and exit song mode.

Loading a Song

To load a song:

1. Press the **SONG** button to enter song mode. The **SONG** LED will begin flashing green and the current song selection will be indicated with a brightly lit LED around the **HATS/RIDES** encoder. All other LEDs will turn off except for the **SONG** button and **HATS/RIDES** LEDs when song mode is active.
2. Turn the **HATS/RIDES** encoder to select a song to load. As each stored song is selected, the various LEDs on the user interface will light to indicate the selected options for the song.

TIP: Continue turning the **HATS/RIDES** encoder beyond the 12 and 1 selections to toggle through the three song banks: bank 1 (green LEDs), bank 2 (amber LEDs), and bank 3 (red LEDs).

3. Press the **SONG** button or **HATS/RIDES** knob to confirm the selection and exit song mode.

Copying a Song to an Empty Slot

To copy a song to an empty slot:

1. Press the **SONG** button to enter song mode.
2. Turn the **HATS/RIDES** encoder and select the stored song to copy (a stored song is indicated by a dimly lit green, amber, or red LED).
3. Press and hold the **HATS/RIDES** encoder for ~2 seconds to copy the song. The selected song's LED will begin flashing.
4. Turn the **HATS/RIDES** encoder and select an empty song slot. If a song slot is empty, the LED will be off.
5. Press the **HATS/RIDES** encoder to paste the copied song to the selected slot. Various LEDs will light to indicate the selected options of the copied song, which also provides confirmation that the song has been copied.
6. Press the **HATS/RIDES** encoder or **SONG** button to exit song mode.

Clearing a Song

To clear a song:

1. Stop playback by pressing and holding the **FOOTSWITCH** for ~2 seconds (or until the **PLAY** LED and **KICK/SNARE** pads begin flashing).
2. Press and hold the **FOOTSWITCH** for ~4 seconds (or until all the **PART** LEDs flash red rapidly), then release.
3. The song has now been cleared and is empty.

TIP: A song can be restored as long as the SDRUM has not been power cycled or any other operations performed since the song was cleared.

To restore a song after clearing it, immediately press and hold the **FOOTSWITCH** for ~2 seconds (or until all **PART** buttons flash green rapidly), then release. The **LEARN** LED will go off and the **PLAY** LED will light to indicate the song is again available.

TIP: If the SilentClear feature is enabled, songs can be cleared without momentarily initiating playback. See '*Enabling Count-In and SilentClear*' on page 27 for more information on using this feature.

Clearing Multiple Songs

To clear multiple songs:

1. Stop playback by pressing and holding the **FOOTSWITCH** for ~2 seconds (or until the **PLAY** LED and **KICK/SNARE** pads begin flashing).
2. Press the **SONG** button to enter song mode.
3. Select the song to clear by turning the **HATS/RIDES** encoder.

TIP: Continue turning the **HATS/RIDES** encoder beyond the 12 and 1 selections to toggle through the three song banks: bank 1 (green LEDs), bank 2 (amber LEDs), and bank 3 (red LEDs).

4. Press and hold the **SONG** button for ~2 seconds (or until all **PART** buttons flash red rapidly), then release.
5. The song has now been cleared and is empty.

TIP: A song can be restored in song mode as long as the SDRUM has not been power cycled or any other operations performed since the song was cleared.

To restore a song after clearing it in song mode, immediately press and hold the **SONG** button for ~2 seconds (or until all **PART** buttons flash rapidly), then release. The **LEARN** LED will go off and the **PLAY** LED will light to indicate the song is again available.

6. Repeat steps 3 and 4 to clear any additional songs.

Advanced Features and Tips

Enabling Count-In and SilentClear

The SDRUM has a count-in feature that can be used to provide a 1-bar drumstick count-in before a song begins playing. When the count-in feature is enabled, so is SilentClear. The SilentClear feature allows songs or song parts to be cleared without momentarily initiating playback.

To enable/disable the count-in and SilentClear features:

NOTE: The SDRUM must be taught at least one song part for the count-in feature to become available.

1. With playback stopped, press the **PART (VERSE, CHORUS, or BRIDGE)** button to select the first part that will be played for the song. The button for the currently selected part will be brighter than all the others.
2. Press and hold the currently selected **PART** button for ~2 seconds to toggle the count-in/SilentClear features on or off. The **PART** button will begin flashing at the rate of the selected part's tempo when the features are enabled.
3. Press the **FOOTSWITCH** to start the count-in.
4. After the 1-bar count-in, the selected part will start playing and you can play along with it.

NOTE: When enabling or disabling the count-in and SilentClear features, the setting will be remembered, even after changing songs and power cycling the SDRUM.

Automatically Generating a Bridge Drum Pattern

You may have noticed that, by default, the SDRUM automatically generates a chorus drum pattern whenever you teach it a verse drum pattern. This is indicated by the VERSE LED lighting solid bright amber and the CHORUS LED lighting solid dim red when an empty song is selected (SONG LED off). Although the chorus pattern is generated automatically by default, the bridge pattern is not and must either be taught separately, once the verse/chorus has been taught, or enabled to be taught along with the verse and chorus.

To automatically generate a bridge drum pattern when teaching the verse and chorus parts:

1. Select an empty song. See '*Creating a New Song*' on page 24 for instructions.
2. Press the **BRIDGE** button. The button should now be lit.
3. Press the **VERSE** button to again select the verse part to teach. The **BRIDGE** button will now light dim green, indicating it will automatically be taught a part when the verse is taught.
4. Teach the verse drum pattern. When done, a complete song with verse, chorus, and bridge will be created.

TIP: The automatically generated bridge drum pattern will mirror the verse drum pattern. Try changing the right-hand drum element using the **HATS/RIDES** encoder to differentiate it from the verse. For example, change from a hi-hat to a ride cymbal and change the sub-beat timing. Note that settings can also be pre-selected before teaching drum patterns. See the following pages for more information.

TIP: Automatically generated chorus and bridge drum patterns can be cleared if you decide to create custom patterns for those parts after teaching. See '*Clearing a Song Part*' on page 23 for more information.

Pre-Selecting Timing and Feel Settings

In most cases, the SDRUM does a great job of automatically determining the timing and feel when learning a new drum pattern. However, if you are teaching the SDRUM a drum pattern and aren't getting the expected results, you may need to override the SDRUM's automatic detection and select a specific timing and/or feel setting before teaching it the new pattern.

To pre-select timing/feel before teaching a new drum pattern:

1. Select an empty song part using the **VERSE**, **CHORUS**, or **BRIDGE** button. The **LEARN** LED should be flashing, indicating the part is empty.
2. Turn the **GROOVE/KIT** knob to select the desired time signature (3/4 or 4/4) and/or feel (ST (straight) or SW (swing)), then press the **GROOVE/KIT** encoder.
3. The pre-selected timing and/or feel LED will now flash, indicating that it will override the automatically detected timing or feel.

NOTE: Pre-selected settings are global, meaning that once settings are pre-selected, they will be used for teaching all parts within the song.

TIP: To turn automatic detection back on, simply select the time signature or feel setting that is flashing, then press the **GROOVE/KIT** encoder.

Teaching an Entire Song At Once

Using the advanced SDRUM features described in this section of the manual, an entire song can be created by teaching only the verse part. Simply pre-select the desired timing and feel settings with the **GROOVE/KIT** encoder, then press the **BRIDGE** button to enable the bridge part to be learned with the verse and chorus. You can even pre-select the **ALT** options and **HATS/RIDES** settings for each part. Arm the SDRUM to learn, then teach the verse drum pattern. That's it! A complete song is now available to jam and experiment with.

Teaching Special Drum Patterns

Teaching a Difficult Pattern

If you aren't getting the results you want when teaching a drum pattern, try turning on the metronome and setting the tempo to the one you want. Also, teaching 2 bars will generally give more accurate results than teaching a single bar. Also, try pre-selecting the feel (straight or swing) and/or timing (3/4 or 4/4). Another trick is to first slow down the tempo, then teach the drum pattern at the slower BPM. After the drum pattern has been learned, speed up the tempo to the desired BPM.

Teaching a Pattern with No Kick or Snare on Beat 1

Some drum patterns, most notably many reggae styles, don't have a kick or snare hit on the first beat. To teach this type of pattern, first enable the metronome. Now, arm the SDRUM to start learning by pressing the FOOTSWITCH, but instead of starting the learning process with a guitar scratch or pressing a drum pad, press the FOOTSWITCH again. The LEARN LED will light solid red, indicating the SDRUM is learning. Continue teaching the rest of the pattern, pressing the FOOTSWITCH again on beat 1 to stop the learning process. The pattern will now play and will have no kick or snare on the first beat.

Teaching a Pattern with No Kick or Snare

There are cases where you might want to create a pattern with no kick or snare—for example, maybe you want quarter note hi-hats, a shaker, or a tambourine only. To create this type of pattern, first enable the metronome. Now, arm the SDRUM to start learning by pressing the FOOTSWITCH, but instead of starting the learning process with a guitar scratch or pressing a drum pad, press the FOOTSWITCH again. The LEARN LED will light solid red, indicating the SDRUM is learning. Count off one or two bars, then press the FOOTSWITCH again. As long as one or more full bars were taught, the SDRUM will play a pattern that contains only the right-hand drum element. Try experimenting with different HATS/RIDES options to further tailor the pattern for your song.

Teaching a Pattern with Kick and Snare on the Same Beat

There is no way of using a guitar to teach the SDRUM a pattern with a kick and snare on the same beat. However, this can easily be accomplished using the KICK and SNARE pads. When pressed together, both the kick and snare will be learned in the pattern.

Teaching a Half-Time Shuffle Pattern

Another common pattern is the half-time shuffle. The best way to teach this pattern is to first pre-select a 4/4 time signature and a swing feel, then enable the metronome. Next, teach the kick/snare pattern and skip one beat between each kick and snare.

Example:

Bar 1				Bar 2			
1	&	2	&	1	&	2	&
•		•		•		•	
K		S		K		S	

← Metronome beats
← What you teach

Play around with different kick/snare patterns to get the desired sound. As long as the basic kick/snare pattern is based around every other metronome beat, you should be able to get a shuffle beat that works.

Teaching a 6/8 Ballad Pattern

Many songs have a 6/8 time signature, where the kick is on beat 1 and the snare is on beat 4. To get this type of beat with the SDRUM, turn on the metronome and set the tempo to the desired BPM. Pre-select a 3/4 time signature to make sure the beat is interpreted correctly. Then teach the SDRUM a 2-bar pattern in 3/4 with the kick on beat 1 of the first bar and the snare on beat 1 of the second bar.

Example:

<table style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6" style="text-align: center; border-bottom: 1px solid black;">Bar 1</th> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">&</td> <td style="text-align: center;">2</td> <td style="text-align: center;">&</td> <td style="text-align: center;">3</td> <td style="text-align: center;">&</td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> </tr> <tr> <td style="text-align: center;">K</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Bar 1						1	&	2	&	3	&	•		•		•		K						<table style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6" style="text-align: center; border-bottom: 1px solid black;">Bar 2</th> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">&</td> <td style="text-align: center;">2</td> <td style="text-align: center;">&</td> <td style="text-align: center;">3</td> <td style="text-align: center;">&</td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> </tr> <tr> <td style="text-align: center;">S</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Bar 2						1	&	2	&	3	&	•		•		•		S						<p>← Metronome beats</p> <p>← What you teach</p>
Bar 1																																																		
1	&	2	&	3	&																																													
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K																																																		
Bar 2																																																		
1	&	2	&	3	&																																													
•		•		•																																														
S																																																		

This will essentially provide a 6/8 pattern. Pick the hi-hat pattern that best fits the song. Also, switch between the swing and straight settings to set the desired feel for the song.

Teaching a Classic Train Beat Pattern

A train beat is a classic kick/snare pattern used especially in country, folk, and bluegrass music. Because it would be almost impossible to teach this iconic beat using a guitar or the built-in pads, a special detection mode has been included in the SDRUM.

To get a train beat, count out four beats for each bar, then scratch a snare (or use the snare pad) to teach a snare on every eighth note beat. For example, try a 2-bar pattern with 16 consecutive evenly spaced snare hits on the & 2 & 3 & 4 & beats for each bar. Also, try enabling the metronome and lowering the tempo to see if that helps—the tempo can be raised back up after the pattern is learned. If you teach this special pattern, you will get a train beat with kicks and snares.

Example:

<table style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="8" style="text-align: center; border-bottom: 1px solid black;">Bar 1</th> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">&</td> <td style="text-align: center;">2</td> <td style="text-align: center;">&</td> <td style="text-align: center;">3</td> <td style="text-align: center;">&</td> <td style="text-align: center;">4</td> <td style="text-align: center;">&</td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> </tr> <tr> <td style="text-align: center;">S</td> </tr> </table>	Bar 1								1	&	2	&	3	&	4	&	•		•		•		•		S	S	S	S	S	S	S	S	<table style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="8" style="text-align: center; border-bottom: 1px solid black;">Bar 2</th> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">&</td> <td style="text-align: center;">2</td> <td style="text-align: center;">&</td> <td style="text-align: center;">3</td> <td style="text-align: center;">&</td> <td style="text-align: center;">4</td> <td style="text-align: center;">&</td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> </tr> <tr> <td style="text-align: center;">S</td> </tr> </table>	Bar 2								1	&	2	&	3	&	4	&	•		•		•		•		S	S	S	S	S	S	S	S	<p>← Metronome beats</p> <p>← What you teach</p>
Bar 1																																																																		
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S	S	S	S	S	S	S	S																																																											

Teaching a Typical Brush Swirl Jazz Pattern

When the BRUSH kit is selected, the HATS/RIDES variation #2 option provides a brush swirl sound, as well as pedal hi-hats. When teaching a typical brush swirl pattern, snare hits should not be played because the pedal hi-hats will act in place of the snare. To teach this type of pattern, pre-select the BRUSH kit and the HATS/RIDES variation #2 option (press the HATS/RIDES encoder repeatedly until the LED is green, if it isn't already). It may also help to pre-select the 4/4 time signature and SW (swing) options, and slow down the tempo.

Example:

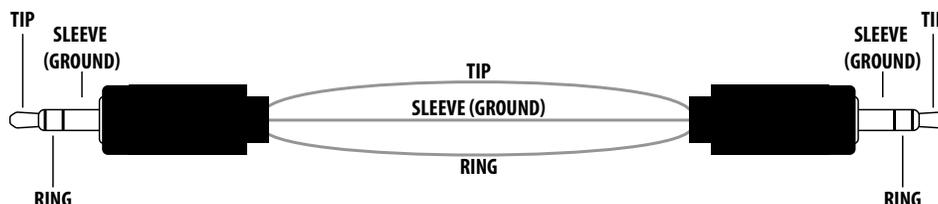
<table style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="7" style="text-align: center; border-bottom: 1px solid black;">Bar 1</th> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">&</td> <td style="text-align: center;">2</td> <td style="text-align: center;">&</td> <td style="text-align: center;">3</td> <td style="text-align: center;">&</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> </tr> <tr> <td style="text-align: center;">K</td> <td></td> <td style="text-align: center;">K</td> <td style="text-align: center;">K</td> <td></td> <td></td> <td></td> </tr> </table>	Bar 1							1	&	2	&	3	&	4	•		•		•		•	K		K	K				<table style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="7" style="text-align: center; border-bottom: 1px solid black;">Bar 2</th> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">&</td> <td style="text-align: center;">2</td> <td style="text-align: center;">&</td> <td style="text-align: center;">3</td> <td style="text-align: center;">&</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> <td></td> <td style="text-align: center;">•</td> </tr> <tr> <td style="text-align: center;">K</td> <td></td> <td style="text-align: center;">K</td> <td style="text-align: center;">K</td> <td></td> <td></td> <td></td> </tr> </table>	Bar 2							1	&	2	&	3	&	4	•		•		•		•	K		K	K				<p>← Metronome beats</p> <p>← What you teach (swing those kick beats just before beat 3!)</p>
Bar 1																																																										
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K		K	K																																																							
Bar 2																																																										
1	&	2	&	3	&	4																																																				
•		•		•		•																																																				
K		K	K																																																							

You should now hear a brush swirl, with pedal hats on the 2 and 4 beats.

Using JamSync

Making JamSync Connections

The SDRUM's JAMSUNC OUT jack can be connected to a DigiTech JamSync-compatible JamMan looper using an optional 1/8" mini stereo (TRS) cable (see cable diagram below). This allows the SDRUM to act as the JamSync master and control the loop record, playback, and stop functions of a slaved looper. Multiple JamSync-compatible loopers can be slaved to the SDRUM for synchronized control.



The diagram below shows a JamSync application using the SDRUM, JamMan Express XT, and JamMan Solo XT cascaded in series.



NOTE: When cascading audio through multiple JamMan loopers in series and using JamSync (as shown in the diagram above), the SDRUM (the master) should be last in the chain in most cases. You will then want to teach the SDRUM first, then record to the second to last device, etc., working backwards through the signal chain. Performing these actions will ensure you record only what you intend to during each pass.

You can reverse this order if you like, but then when you record on the first slave, you'll be recording a mix of your live guitar and whatever the master is playing back, and so on down the line. When using the AMP OUT and MIXER OUT jacks, you can place the SDRUM before or after the loopers and effects, whichever works for you, since the drums don't come out of the AMP OUT jack.

To connect JamSync devices:

1. Connect the SDRUM's **JAMSUNC OUT** jack to the **JAMSUNC IN** jack of the first slave device. Depending on the JamMan looper used, the **REC** and **PLAY** LEDs on the slave device may briefly flash or the display may change to indicate the unit is in slave mode.
2. Daisy-chain any remaining JamSync slaves in the same manner.

Teaching the SDRUM and Recording Loops

When using a JamSync-compatible JamMan looper with the SDRUM, the looper must be armed for recording either before playback is initiated in the SDRUM or during playback and before the SDRUM reaches bar 1 (the beginning of the drum pattern). It's at bar 1 that the SDRUM will tell the slave device to begin recording, but the slave must be armed for recording in advance.

To use the SDRUM with JamMan loopers:

1. With an empty part selected, press the **FOOTSWITCH** on the SDRUM and teach it a drum pattern by scratching the guitar or using the **KICK/SNARE** pads.
2. When finished teaching the SDRUM, press the **FOOTSWITCH** once to set the loop end point. The drum pattern will automatically begin playing in a repeating loop and the **PLAY** LED will light solid green.
3. Press the **FOOTSWITCH** on the slave looper to arm it for recording. The looper can be armed at any time while the SDRUM is playing. The looper's **REC** LED will flash red to indicate it is armed for recording. Recording will begin once the SDRUM makes another pass of the beginning of the drum pattern (the **REC** LED will light solid red on the slave device when recording begins). Once recording has begun, play the guitar part. The recorded loop must be the same length as the SDRUM's loop or a multiple of it.
4. When finished recording to the slave device, press the slave's **FOOTSWITCH** once to set the loop end point. The phrase will automatically begin playing along with the SDRUM's loop and the **PLAY** LED will light solid green on the looper.
5. Repeat steps 3-4 to record loops for any other loopers connected via JamSync.
6. Hold the **FOOTSWITCH** on the SDRUM to stop loop playback on all devices.

NOTE: The SDRUM has some capabilities that are not currently supported by any JamSync slave devices:

- **Variable Tempo** – If a loop is recorded on a JamSync slave, and then the tempo on the SDRUM is subsequently changed, the slave will lose sync with the SDRUM. It's recommended that the tempo be dialed in for a song on the SDRUM before recording to a JamSync slave.
- **Multiple Parts** – When changing parts on the SDRUM, the JamSync slave will not be aware of the change. So if the slave's loop length is compatible with the new part (e.g., it is an integer multiple of the new SDRUM part's loop length) then the device will stay in sync; but if the slave's loop length is not compatible, it will lose sync with the SDRUM.

NOTE: Some JamSync-compatible loopers support a "Sequential Slave Recording Method" (recording loops to one looper, then immediately to the next, etc.). Note that the SDRUM does not support this functionality.

To play the SDRUM and slave devices:

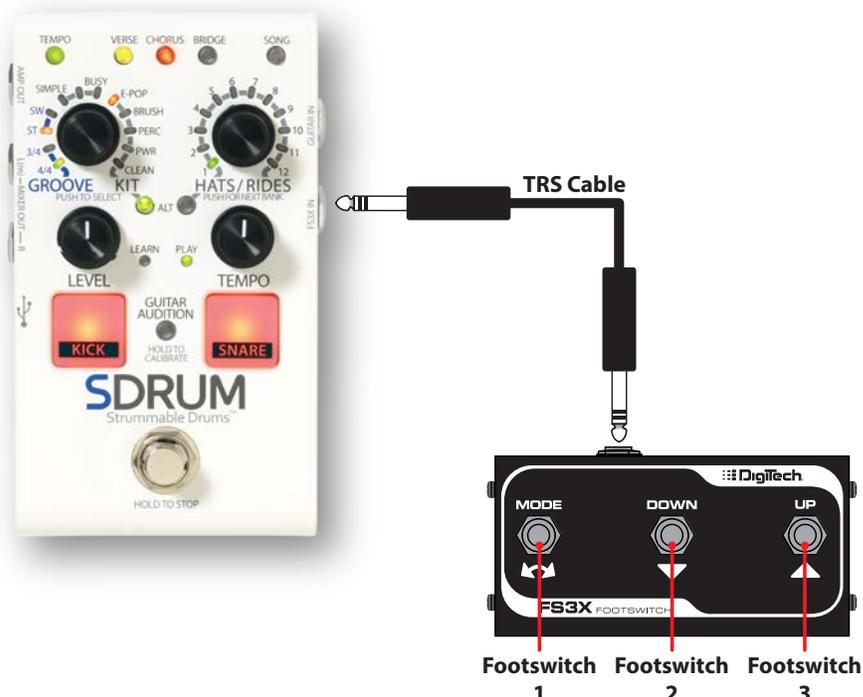
1. Press the **FOOTSWITCH** on all slave devices to arm them for playback. The green **PLAY** LED will flash on each.
2. Press the **FOOTSWITCH** on the SDRUM to start playback. Each slave will start playing in sync with the SDRUM and its LED will light solid green.
3. Hold the **FOOTSWITCH** on the SDRUM to stop loop playback on all devices.

Using an FS3X Footswitch

An optional DigiTech FS3X Footswitch can be connected to the FS3X IN jack for additional hands-free control of the SDRUM.

A TRS (tip-ring-sleeve) 1/4" cable must be used when connecting the FS3X.

When using a FS3X for control, there are three modes of operation to select from: Live, Table Top, and Direct Part. These modes are accessed by holding one of the FS3X footswitches when making the connection to the SDRUM. The table below describes how to enter each FS3X mode and the functions controlled by each.



FS3X Mode	Hold While Connecting	FS3X Control		
		Footswitch 1	Footswitch 2	Footswitch 3
Live (Default)	FS3X Footswitch 1 	Select Hats/Rides Variation: Press to select the next HATS/RIDES variation (hold for previous).	Select Hats/Rides Sub-Beat Timing: Press to select the next HATS/RIDES sub-beat timing (hold for previous).	Play a Crash Cymbal: Press to play a crash cymbal on demand.
Table Top	FS3X Footswitch 2 	SDRUM Functions: Same functionality as SDRUM footswitch (press to play and switch parts, press and hold to stop and clear).	Add a Fill: During playback, press for a fill. Temporary Mute: Press and hold to temporarily mute the drums. Once the FOOTSWITCH is released, a fill will be played and the drums will play normally at the start of the next bar. Tap Tempo and Metronome On/Off: With playback stopped, tap repeatedly to tap in the tempo (if the selected part is empty, the metronome will turn on). Press and hold to turn the metronome on/off (selected part must be empty).	Play a Crash Cymbal: Press to play a crash cymbal on demand.

Using an FS3X Footswitch

FS3X Mode	Hold While Connecting	FS3X Control		
		Footswitch 1	Footswitch 2	Footswitch 3
Direct Part	FS3X Footswitch 3 	Select Verse/Play Fill: Press to switch to the verse. If the verse is already selected and playing, press to play a fill.	Select Chorus/Play Fill: Press to switch to the chorus. If the chorus is already selected and playing, press to play a fill.	Select Bridge/Play Fill: Press to switch to the bridge. If the bridge is already selected and playing, press to play a fill.
		Temporary Mute: During playback with the verse part selected, press and hold to temporarily mute the drums. Once the FOOTSWITCH is released, a fill will be played and the drums will play normally at the start of the next bar.	Temporary Mute: During playback with the chorus part selected, press and hold to temporarily mute the drums. Once the FOOTSWITCH is released, a fill will be played and the drums will play normally at the start of the next bar.	Temporary Mute: During playback with the bridge part selected, press and hold to temporarily mute the drums. Once the FOOTSWITCH is released, a fill will be played and the drums will play normally at the start of the next bar.
		Tap Tempo and Metronome on/off: With playback stopped, tap repeatedly to select the verse and tap in the tempo (if the verse part is empty, the metronome will turn on). Press and hold to turn the metronome on/off (verse part must be empty).	Tap Tempo and Metronome on/off: With playback stopped, tap repeatedly to select the chorus and tap in the tempo (if the chorus part is empty, the metronome will turn on). Press and hold to turn the metronome on/off (chorus part must be empty).	Tap Tempo and Metronome on/off: With playback stopped, tap repeatedly to select the bridge and tap in the tempo (if the bridge part is empty, the metronome will turn on). Press and hold to turn the metronome on/off (bridge part must be empty).

To change the FS3X mode:

1. With the SDRUM powered on and fully booted, unplug the FS3X from the SDRUM if it is currently plugged in.
2. Press and hold the **FS3X FOOTSWITCH** corresponding to the desired mode (see the previous table).
3. While holding the **FOOTSWITCH**, plug the FS3X into the **FS3X IN** jack. Keep holding the **FOOTSWITCH** for ~2 seconds after plugging in the FS3X before releasing it.
4. The SDRUM will now use the new FS3X mode.

Factory Reset

Performing the factory reset will return the SDRUM back to its original factory default settings:

- All 36 songs will be erased.
- The guitar calibration profile will be erased.
- The count-in feature will be disabled.
- CLEAN will be selected as the default drum kit.

To perform a factory reset:

WARNING: Performing the factory reset will irreversibly delete all 36 songs. Once performed, this procedure is irreversible.

1. Unplug the power adapter from the SDRUM.
2. Press and hold the **KICK** pad, **SNARE** pad, and **ALT (GROOVE/KIT)** button, and then plug in the power adapter.
3. Wait for the LEDs to begin circling the **HATS/RIDES** encoder, then release the buttons.
4. When the LEDs surrounding the **HATS/RIDES** encoder begin flashing amber, press the **HATS/RIDES** encoder and wait for the factory reset to complete. The **HATS/RIDES** LEDs will cycle red, then amber, then green during the reset, and once complete, the SDRUM will return to normal operation.

NOTE: If the **HATS/RIDES** encoder is not pressed, the operation will time out and the factory reset will be cancelled. Pressing any button other than the **HATS/RIDES** encoder will also cancel the factory reset.

Updating Firmware

The SDRUM's firmware can be updated by connecting a Mac® or PC computer to the SDRUM via the Mini USB connector. As new firmware updates become available, a firmware update utility program will be made available on the SDRUM product page: <http://digitech.com/en/products/sdrum>.

Specifications

Interface

Controls:	Groove/Kit, Hats/Rides, Level, Tempo
Backlit Buttons:	Tempo, Verse, Chorus, Bridge, Song, Alt (Kit), Alt (Hats/Rides), Guitar Audition
Pads:	Kick, Snare
Footswitches:	Main Footswitch
LEDs:	Learn, Play
Jacks:	Guitar In, FS3X In, Amp Out, Mixer Out L(m), Mixer Out R, JamSync Out
Other:	Mini USB port

Inputs

Guitar Input:	Type: Unbalanced, 1/4" TS Impedance: 1 M Ω Max Input: +8 dBu
FS3X Input:	Type: 1/4" TRS (compatible with DigiTech FS3X)

Outputs

Amp Output:	Type: Unbalanced, 1/4" TS Impedance: 1 k Ω Frequency Response: 20 Hz–20 kHz
Mixer L/R Outputs:	Type: Impedance balanced, 1/4" TRS Impedance: 1 k Ω Max Output: +19 dBu Frequency Response: 20 Hz–20 kHz
JamSync Outputs:	Type: 1/8" TRS

Performance

Bit Depth:	24-bit
Sample Rate:	44.1 kHz
Signal-To-Noise Ratio:	\geq 108 dB, A-weighted
THD + Noise:	0.004% @ 1 kHz

Specifications

Storage

Maximum Bars:	4 bars per song part
Maximum Parts:	3 per song
Maximum Songs:	36

USB

Type:	Mini-B, USB 2.0
-------	-----------------

Physical

Dimensions:	5.25" (L) x 3" (W) x 2.45" (H) 133.4 mm (L) x 76.2 mm (W) x 62.2 mm (H)
Unit Weight:	1.14 lb 0.52 kg
Shipping Weight:	1.92 lb 0.87 kg

Power

Power Requirements:	9 VDC external power adapter
Power Consumption:	<5 W
Current Draw:	500 mA
Power Adapter Model:	PS0913DC-04 (US, JA, EU, AU, UK)
Power Adapter Polarity:	
Power Adapter Output:	9 VDC 1.3 A



PHONE: (801) 566-8800

WEB: digitech.com

SUPPORT: digitech.com/en-US/support

SDRUM Owner's Manual
5086301-A

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