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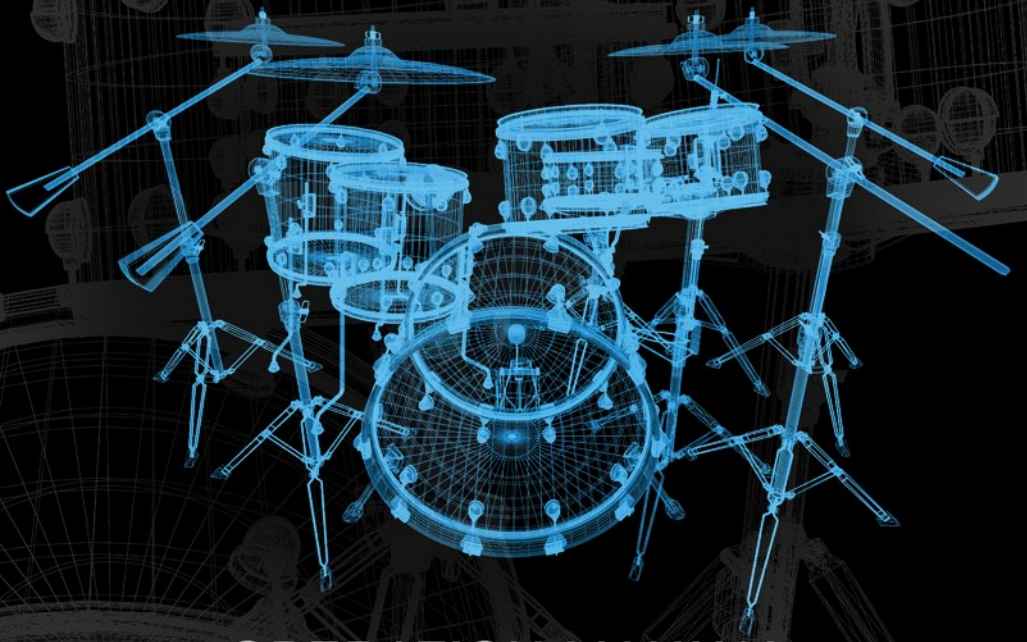
SUPERIOR DRUMMER® 2.0



OPERATION MANUAL

TOONTRACK®

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Sonalksis
QUALITY DIGITAL AUDIO SOFTWARE

TOONTRACK MUSIC

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INTRODUCTION

Everyone from the Toontrack development team are producers and musicians with their formative years back in the good old days of analog recordings, winding back and forth tape recorders, getting session players together and setting up the entire drama in the studio.

Now, like everyone else, we've all gone digital (which is a lot more convenient). But, sometimes, you don't get *that vibe*. Many of the vibrations and sounds connected to recording are by-products of a performance but they are completely crucial to making great sounding music.

A drumkit recorded live is one of the best examples of this... the drums full on in all the microphones, hearing the ambience of the whole kit from afar or just the snare hard-hitting through one mike and the hi-hat bleeding into it, the character of each drummer - all of the things that tell you this is a live session.

It has always been our opinion that having a desire to achieve an authentic live performance with programmed sequences, in reality, proves to be no easy task, and it is fair to say that if there is one area where this really shows, it is in the drum department.

As you will come to appreciate in working with this product, a well recorded live drumkit, with all of these nuances, contributes enormously to the atmosphere of the finished recording. If the drum track is tight and has the right drive, it will ease the recording process, as the rest of the players will respond to the fluidity of the drum performance. In short, as if you didn't know, a great drum track is the foundation of a great recording.

Superior Drummer®, therefore, gives you a traditional recording session in a studio, with the opportunity to create those classic drum tracks without actually having to call the drummer.

In 2005 Toontrack Music was contacted by Pat Thrall with an urgent request to record drums for the Superior Drummer® software engine at the Hit Factory, New York.

Hit Factory, the centre of so many legendary recordings, was being torn down to later be turned into condominiums. Pat Thrall, an avid dfh Superior user, wanted to sample the Hit Factory recording room so that the mighty sound produced within those walls would live on, available to producers and musicians after the studio itself was no longer in existence. The recordings at Hit Factory were literally conducted while the wrecking crew was tearing the studio down.

These sessions were originally meant to be released as an expansion pack for the original dfh Superior. However, after discussions with Pat, Neil (Dorfsman), and all concerned at Toontrack, it was decided that these sounds were too important to be released merely as another collection of sounds. The Hit Factory sessions were a format in their own right, and with that in mind, Toontrack® Music started working on what was to become Superior Drummer® 2.0.

In addition to the Hit Factory sessions, Toontrack decided to record two other New York recording-venues frequented by Pat, Neil and NirZ : Avatar Studios and Allaire Studios. A portion of the first Avatar sessions were modified to be part of EZdrummer®, but taken together these recordings made up the heart of what would comprise the release of Superior Drummer® "The New York Studio Legacy Series".

We've been waiting to announce and release these recordings knowing that they deserved a software engine that would set a new industry standard of its own in sampled drums. 2008 finally sees the realization of Superior Drummer®, "The New York Studio Legacy Series".

TOONTRACK MUSIC

1 INSTALLATION

1.1 System Requirements

- 4GB free hard disc space, DVD drive
- Windows XP, Vista or 7 (32 bit), Pentium IV / Athlon 1,8 GHz with 1GB RAM
- Mac OS X 10.4 (Tiger) or higher, Dual G4 1,25 GHz with 1GB RAM

Recommended Setup:

- 25GB free hard disc space, DVD drive
- Modern G5, Intel or AMD multicore CPU with 2GB RAM or more
- Sequencer application and professional soundcard
- MIDI controller such as keyboard, drumpads or electronic drumkit

1.2 Installing Superior Drummer

Please ensure you are logged in as an Administrator and have no User Access Control restrictions enabled before proceeding (see your operating system's help files for details).

1) Insert DVD number one (1) and navigate to the /Install folder relevant to your platform.
2) Double-click on the *Superior Drummer Installer* located in this folder and follow the instructions.

The software installer will automatically install the components in the appropriate location for your currently installed virtual instrument host. On PC, you should however verify that this is the case and change the destination targets according to the documentation that came with your host program, if necessary.

Once the Software Installer has completed successfully, the Installer will automatically launch the installation of the Superior Drummer Sound Library.

You will be given the opportunity to choose between four different installations - from the 4 GB basic install to the full 20 GB Sound Library. Please make your selection, then browse your file manager and select the desired location for the Sound Library installation. The Sound Library can be installed to any internal or external drive.

Please allow every DVD to finish and wait for your system to prompt for new media before inserting a new DVD. Installing the Sound Library can be time consuming, so please be patient!

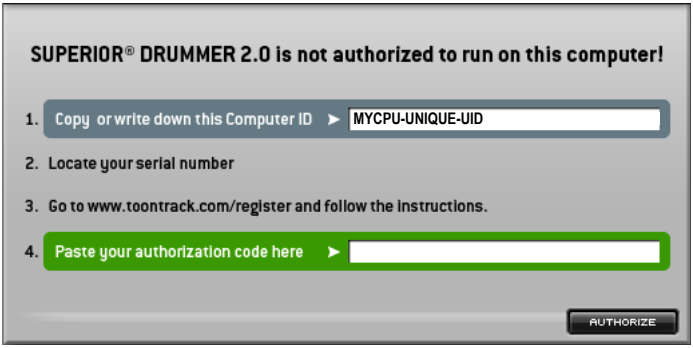
Should the install process be interrupted for any reason, please restart the Installer and choose the same install option and install location. Should installation still fails to complete but DVD1 completed successfully, you may still be able to start working by manually linking the minimal install from within the software. Please refer to the last chapter at the end of this manual for instructions.

IMPORTANT: The custom groove (MIDI) library is not included in the main installer and is available from the Toontrack website, upon registration of this product. Please refer to the instructions included with the downloaded material for install instructions.

1.3 Registering Superior Drummer and Authorizing your Computer

If this is your first Toontrack product, please begin by setting up a user account at http://www.toontrack.com/register/ and register your product by using your unique serial number, found on the back of the DVD sleeve (or alternative placement on the product packaging). If you already have one or several Toontrack products registered to an account, simply log in and register.

On first launching Superior Drummer, you will be prompted to authorize the software. The authorization screen will display your unique Computer ID and ask you to key in an authorization code in order to use the software. To obtain the response code, please follow the on-screen instructions:



1. Copy or manually write down your unique **Computer ID** from the Authorization Screen.
2. Go back to your account and click the "Authorize Product" button in the right hand menu.
3. Add a short "Computer Description" for your convenience.
4. Paste or manually enter the Computer ID to generate your **Authorization Code**.
5. Paste or manually enter the Authorization Code back into the Authorization Screen in Superior Drummer
6. Press <Authorize> in the product interface.

You will be greeted with a congratulation to confirm that Superior Drummer has been successfully authorized.

Should Authorization fail, please first make sure the computer ID displayed in the Authorization Screen indeed matches the one you used to generate your code. If not, please repeat the above steps and use the proper ID.

Should Authorization still fail, please review the Authorization FAQ located at http://www.toontrack.com/faq/ If the problem remains unresolved after consulting the above repository of issues and you need to contact support, please make sure to include your serial number, Computer ID, and a detailed description of the issue so our support advisers may help you as efficiently as posible.

2 INSTRUMENT OVERVIEW

2.1 The SUPERIOR Instrument

The SUPERIOR libraries and the custom-built sampler, Superior Drummer®, function from within your host program, as a VST, AU or RTAS plug-in. The following is a brief overview of the features of the SUPERIOR engine in its current incarnation, version 2.2

Automatic Velocity Mapping

In Toontrack libraries, hits are separated into three categories for velocity mapping purposes: soft hits, gradient hits and hard hits (note: not all drums follow this principle and exact population statistics may differ).

The intensity levels for all soft and all hard hits are the same in their respective categories. We've sampled up to 25 soft hits and 25 hard hits on selected instruments. Finally, we've sampled 15 to 25 layers of gradient hits (many more in subsequent libraries), increasing gradually from soft to hard - again each populated with up to 25 hits.

Through a unique system developed by Toontrack Music the sampler automatically maps these hits to the appropriate velocity range. By default all soft hits are mapped between MIDI velocity values 1 to 20 and played in a randomized manner. Hard hits are triggered by a MIDI velocity of 127, again in a randomized manner, so as to make sure no two hits in a sequence is the same. Finally, gradient hits are triggered between velocities 21 and 126. This, of course, can be changed to suit your taste.

Intelligent Playback

The SUPERIOR instrument is full of features that eliminate the dreaded "machine-gun effect". For example, as stated already, while playing or programming, the same sample will never be played twice in a row, unless that's what you want of course. All hits can be randomized, which makes it impossible to detect a certain hit sequence or pattern... just like a real drummer never hits the drum exactly the same way twice.

Integrated Groove player

Not everyone is able to program realistic drum tracks, or record them into a computer using a dedicated drum controller or MIDI keyboard. In fact, even if you can, there is often room to use someone else's idea or performing skills in a track, with a minimum of fuss... we all know about deadlines and there is nothing wrong with using a helping hand (or two), especially when you get to retain overall creative control!

The good news is that the SUPERIOR instrument now includes an integrated MIDI player, complete with drag and drop capabilities. By dragging and dropping individual kit pieces patterns into your host, you may even create totally new grooves that are nonetheless completely consistent with how a drummer would approach it. And because this is MIDI information from the bottom up, you can post-edit it to make them your own even further.

Bleeding/Leakage

The much desired ambience resulting from a drum bleeding into all microphones is an essential part of the studio experience. This should not have to be sacrificed while programming drum tracks because some software head has decided that it isn't needed. The good news is you no longer have to!

The SUPERIOR instrument not only gives you full-on leakage, but will also let you specify which drum leaks into which microphone, a feature useful to keep memory usage low while programming or previewing sounds. For those who need to keep memory usage at a minimum, a clever system of offline bouncing allows you to feature all bleeds when rendering completed drum performances as audio files.

Microphone Leakage Control

In addition, the SUPERIOR instrument goes one step further with its unique "Mic leakage control", allowing you to set the exact level (volume) you would like to hear for each drum in any one microphone.

Thanks to this feature, you no longer have to worry whether the result of compressing the Snare track is an overpowering hi-hat that needs taming another way. You don't have to worry because this is no longer a problem. With the SUPERIOR instrument you can just select the microphone that you wish to edit and lower the level of the drum that is causing you trouble. And since this operation can be performed with any microphone in relation to any instrument in the drumkit, the net result is unprecedented flexibility over your virtual session.

Flexible Built-in Mixer

The SUPERIOR instrument includes a built-in Mixer, complete with extensive routing to busses and outputs. With up to 16 busses for your subgroups, and 16 fully configurable stereo outputs addressable individually from your host programs, there simply is no limit to the level of processing that can be performed.

Integrated Processing Effects suite

In addition to the above, the SUPERIOR instrument ships with an award winning suite of processing effects powered by Sonalksis. This means that you have at your disposal an arsenal of sound shaping tools that is second to none for drum processing. Best of all, since these FX are integrated in the engine, you can confidently exchange your drum tracks with other SUPERIOR users, knowing that the sound you have intended will be there on playback.

Mixing and Matching of instruments

The SUPERIOR instrument supports all current Toontrack sound sets as well as legacy SUPERIOR libraries. You can access ANY instrument from ANY library via a sophisticated system of X-Drums, mixing and matching instruments with no limitation. You can even specify which microphones to use for the external kit pieces!

And thanks to the flexible Mapping system, you can associate any combination of instruments - from multiple snare drums to more creative combos to be triggered simultaneously from your MIDI drum track - assembling your dream instrument in entities called MIDI nodes that can be triggered effortlessly from your sequencer.

Full control over the instruments response

Using the comprehensive 'Velocity Control' section, you will be in control of all aspects of the triggering process. Don't like the response of a snare to your particular playing style? Change the response curve for the instrument, or change the response for one of the available articulation only.

A four segment curve with separate input and output limits will give you instant access to the deepest level of the sound library, and allow you to customize it to your taste or needs for a particular project.

Transmuting (advanced polyphonic mute groups)

The SUPERIOR instrument is designed to be in command not only of what sample mutes others, but also how smoothly the transition occurs. Through a technique called transmuting, a technique far more advanced than traditional mute groups, realistic hats work can finally be achieved in software.

Continuous Controller Support

Last, but not least, the SUPERIOR instrument supports Continuous Controller messages sent from capable external MIDI controllers such as edrum hi-hat controller pedals and keyboard mod wheels. This, in combination with transmuting, procures a level of realism comparable to the complex foot work of a professional drummer at a price you can afford. You can even draw CC data in your sequencer for ultimate control of the performance!

Memory Management

Forget about Hard Disk buffering technology, which never quite works on a Tuesday unless your studio is on the sea side, facing south. With the SUPERIOR instrument, on-the-fly data compression/decompression will ensure a hassle free experience, at no cost to playback quality, and unprecedented results.

As if that wasn't enough, the SUPERIOR instrument can also be set to load only those samples necessary for playback, or operate in 16 bit mode, at the touch of a button. Add to that extensive control over the pool of samples and you will always be in control of what is filling up your RAM, tailoring the sounds to your computer equipment, not the other way around.

Efficient Sample Storage

Thanks to Toontrack proprietary technology, TPC, Toontrack Percussive Compression, samples are stored in compact form on your hard drive for a savings of up to 70% both on disk but also in RAM. This makes it possible to load large kits on a laptop, where disk space and memory is usually restricted.

2.2 Construction Window

The Construction window is where you will be building your drumkit. The main area in the middle, the Studio view, represents the kit you have assembled, including any additional 'X-Drums' you may have created.

Click on the drums to hear a preview. To load a different selection of instruments, click the down arrow on the position you would like to change and choose one of the option in the list.

Many instruments were recorded with a variety of utensils to hit the drums. Use the 'Tool Settings' in the top right corner of this section to change hand tool, bass drum beater or even turn the snare 'wire' off.

The bottom section of the Construction window features essential functionalities, easy to access regardless of what window you are in. From left to right:

- *Memory & Status*, giving you a conveninent overview of RAM usage and important messages related to sample loading or mismatch of incoming MIDI notes that you may want to correct.
- The *EZ Mixer*, a simplified mixer giving you instant access to a single microphone for quick volume level dialing, panning or overall bleed adjustment.
- The *Master Volume* section, controlling the sampler volume output. It doubles up as a basic transport unit for the internal MIDI player.
- *Voices and Layers*, a section dedicated to optimize the sampler's demand on the computer resources, both in term of CPU, by limiting the instrument's polyphony, and RAM, by dialing exact layer populations.
- the *Instrument* section, where instruments' relative volumes can be adjusted, including balancing the articulations available across the set. You may also use it to quickly map and 'learn' incoming MIDI notes.

Advanced users may prefer the Classic view. It features 'Superpads', a representation of the kit pieces familiar to those who have owned previous versions of the SUPERIOR Instrument. The Classic view offers the extra flexibility of velocity sensitive preview and individual solo and mute controls, available all at once.

The section to the right can be accessed from either the Standard or Classic view and is used for advanced Instrument control. The available controls, from top to bottom, are:

- The *X-Drums* section, where additional instruments can be brought into the kit and their microphone configuration defined.
- The *Envelope* designer, a standard ADSHR envelope shaping editor.
- The *Pitch* section, where you may alter the instrument's original pitch in real time and apply changes.
- The *Humanizer*, an ensemble of controls that specifies the triggering rules among the sample pool for a given instrument, or even a single articulation.

The function of each of these controls is individually detailed in later chapters of this manual, but before we delve deeper, we would like to introduce the heart of the engine, the built-in Mixer.

2.3 Mixer Window

As stated at the beginning of this chapter, the SUPERIOR instrument includes a fully featured Mixer allowing you to route each instrument's microphone(s) to busses and outputs, applying effects processing internally if desired.

Each microphone present in the room during the session has a dedicated channel strip and can be routed directly to one of the 16 outputs, or sent to any one of the 16 busses. You can even define exactly what amount of the direct signal or bleed should be sent to a particular bus.

The anatomy of the channel strips will be the subject of a later chapter. In a nutshell, however, regardless of channel type, the INSERTS section sits at the top, followed by the BUSS SEND section, BLEED CONTROL (with collapsible pane), VOLUME FADER, and finally the OUTPUT section.

You can group channels to be affected by your actions, be it muting, soloing or any other adjustments. For example, drag across the channels name in the lowest part of the channel strips to adjust the volume of all the rack toms at the same time. You can also SHIFT click for consecutive channels selection and Control [PC] click / Command [MAC] click on any channel to select or deselect it.

To avoid unnecessary scrolling in the Mixer, you can conveniently display or hide a particular channel type, by clicking their respective icon in the bottom left corner of the Mixer section.

To finish this quick overview of the Mixer, know that the global control to the left of the channel strips toggles between the audience and drummer's perspective.

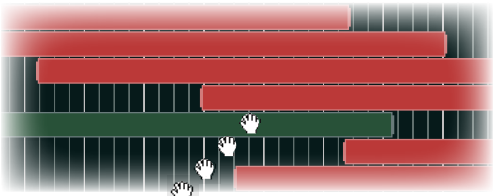
2.4 Grooves Window

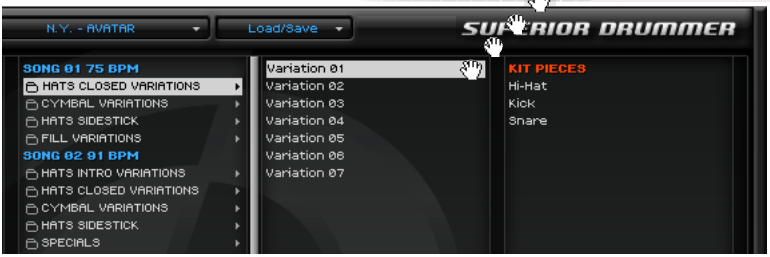
The Grooves window allows you to control the internal MIDI player engine of SUPERIOR Drummer.

The controls available should be self-explanatory. All you have to do to get started is select a groove in the browser and press the Play button next to the LED display or in the middle of the lower section of the interface.

You may double up the tempo of the selected groove, or on the other hand slow it down for a half-time feel. You may also alter its dynamic with the velocity 'sweep' control.

Once you have find a suitable groove, building a drum track is as simple as dragging it into your host.





2.5 Mapping Window

The Mapping window, as the name implies, is where you can access and change the assignment of the incoming MIDI notes to the Instruments in your drumkit, or more specifically, the Articulations that make them up.

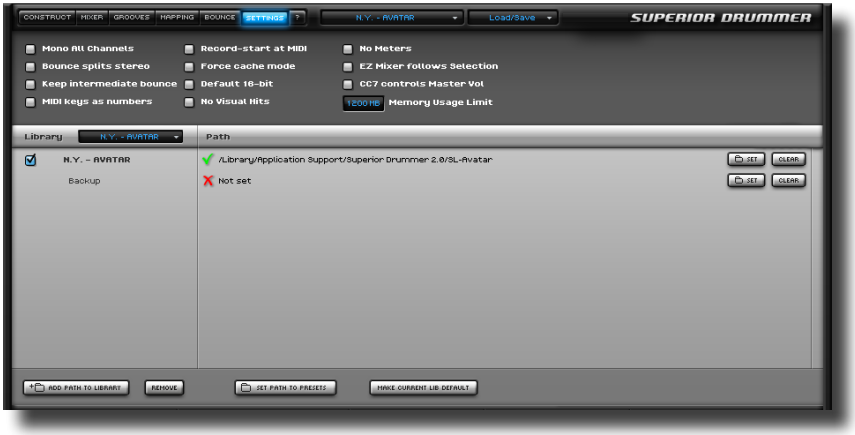
But this is not all. Advanced users will get access to a wealth of controls to correct the instruments response and associate them in various manners, from simple to complex, for endless creative possibilities. You may for example 'stack' multiple snare drums and dial in exactly which instrument will dominate playback at a particular MIDI velocity.

If this is your first experience with SUPERIOR Drummer, we strongly recommend you spend some time familiarizing yourself with the basic operations of the instrument before delving deep into the possibilities that this window offers. That said, some examples are available as presets so feel free to look at them - but their educational value will only start to make sense once you have a clear understanding of a number of basic concepts, through reading the following few chapters.

2.6 Bounce Window

This is a secondary window used to render audio files from the engine.
We will detail its operation in great details in a dedicated chapter so do not worry about it at this stage.

2.7 Settings Window



The settings window is where the SUPERIOR instrument preferences can be set, including the paths pointing to your sound libraries. Again do not worry about it at this stage as this is non essential to getting you started. If for some reason you are not able to get started, however, please refer to the troubleshooting section at the end of this document.

2.8 Help Menu

Essential resources can be found here, from online support information to MIDI mapping for all installed products. Getting familiar with all the resources presented here will avoid many frustrations so we strongly encourage you to consult it whenever you have a question about Superior Drummer or a Sound Library.

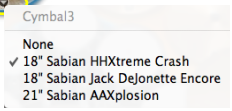
3 DETAILED OPERATION

3.1 Instrument Selection

When the plugin is first started, the default drum kit should load automatically. The RAM counter in the bottom left corner of the interface will inform you of how much memory the kit uses, as well as how far in the loading process you currently are. Once the two figures match the loading is completed.

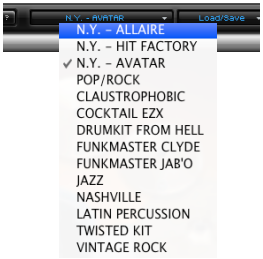
[TIPS] Note the prominent LCD right at the bottom of the window, it's Superior's way to inform you of what's going on so always keep an eye on it!

If you would like to select a different drum at a certain position simply click the down-arrow lip on each part of the kit and select your preferred instrument from the menu.



Again remember that you can quickly audition the drum by clicking in the interface. For a refined preview you can also click the audition pad in the bottom right hand corner.

If you own any other SUPERIOR compatible set, such as legacy Superior libraries, Superior expansion packs aka SDX-s or EZX-s, designed for both EZdrummer and Superior Drummer, you can of course decide to use them as the foundation of your drumkit. Remember that you can always add X-Drums at a later stage so choose the kit that best suits your project at this stage. To do so, simply call the expansion selection box at the top part of the interface:



You can then customize this kit as stated above, selecting the kit pieces as desired. Select 'None' if you want to un-populate a particular position (either because you would like to save RAM or because you want to use an alternative drum in place, via the X-Drums feature - see next paragraph).

Once you are done with the kit building exercise you can save this base kit by clicking the down arrow next to the 'Construct' header:

There you will find standard management facilities such as Save and Delete. There are also additional entries such as 'Save Selected As' that will be covered very shortly.

User presets will appear in the submenu once created. You may organize them in submenus using the 'Manage in Finder/Explorer' entry. Selecting it will open a standard OS window, allowing you to create additional folders to populate, copy files from to send to your friends, or drop additions you may have received from another SUPERIOR Drummer user.

[!] You may notice that some instruments are preceded by a '*', especially if your selection of tools is different than the default. This means that this particular instrument is not available with the current selection of tools. Simply select a different tool from the 'Tool Settings' menu at the top of the interface. Please consult the sound library Description PDF available from the Help menu for detailed tool availability.

3.2 Custom Kits using X-Drums

As stated above, SUPERIOR allows you to access any of your Toontrack Sound libraries. But it also gives you the possibility to extend these kits with alternative kit pieces, or even to layer drums to respond as a group to the incoming MIDI from the sequencer, all from a single instance.

Thanks to a feature called X-Drums, eXtra instruments can be brought into the Construction window to be used in support of the base kit. There are technically no limitations to the scheme and, for example, percussion instruments can be added to a drum kit (or vice versa).

To add an X-Drum to the project, either by creating it from scratch or using previously saved presets, simply click the 'x-drum' label in the top right hand corner of the Construction window:

As you can see in the screenshot on the right, the SUPERIOR X-Drum section allows you to pick any Sound Library installed, including the library currently used for the base kit in the Construction window.

Should there be a choice of tools available in the library, you will also be able to choose between them (if no tools selection is available the menu will remain closed), before or after specifying the kit pieces to be added.

We will come back to the Microphone Assignment and MIDI section. For now let's concentrate on the Instrument properties, regardless of whether they are X-Drums or elements of the kit you started from.

[Tips] Once you have added an x-drum to the Construction window, Right PC click / Control MAC click it to move to a convenient place in the window. Note that this has no effect on the panning and is for convenience only.

You can toggle the x-drum view from the default representation to a space saving alternative, where the x-pads are represented by a generic icon. This can be on a per-drum basis, using the 'use generic picture' in the bottom corner or toggled globally from the x-drum menu at the top. Generic x-pads have fixed placement.

3.3 Instruments Properties

Before we describe the Instrument properties in detail, let's take a look at the various ways you can select your desired Instrument(s).

Selection of a single Instrument is performed by Right [PC] clicking / Control [MAC] clicking it in the Construction window, or by selecting it in the Instrument section found in the bottom right of the interface.

Multiple selections can be achieved by clicking on Instruments while holding down the SHIFT key. The Instruments selected will take on a blue tint around the edge to confirm selection. In addition, all Instruments present in the Construction window can be selected in one step with Control [PC] clicking / Command [MAC] clicking any Instrument.

Multiple selections can be useful for editing several instruments at once. It is also useful to save and recall Instrument properties selectively, and you may remember the 'Save Selected As' entry we mentioned at the beginning of this chapter. Selecting a combination of Instruments to save as a group or to be replaced by a previously saved selection is one of the main advantage of 'Combined Presets'. We will cover Combined Presets in greater details at the end of this chapter. For now, please try to perform a few multiple selections then Right [PC] click / Control [MAC] click on any Instrument, such as the x-drum you have created earlier.

The 'Instrument' selection box will update with the currently selected Instrument. You can then quickly cycle through the instrument's articulations using your mouse scroll wheel if available or manually select an entry under the 'Articulation' header.

Think of articulations as particular techniques that the drummer might have used or as variations that would be difficult to reproduce through MIDI only.

[Tips] Depending on the Instrument selected in the Construction window, some of these Articulations may not be available. They may, for example, not have been sampled with this particular set of tools and can therefore not be used with this specific drum selection. An '*' is used to represent the unavailability.

The preview pad already mentioned differs from the audition feature accessed by clicking on the drum itself in that it is velocity sensitive and allows you to sweep the entire spectrum of dynamics for the drums. Click on the preview pad, first towards the top to preview the hardest hits, then progressively towards the bottom for soft taps. In addition to auditioning the drums at all velocities, this section allows you to quickly mute or solo a particular Instrument in all of the microphones. You can also adjust the volume level of this drum, again in all the microphones at once from here.

Additionally, engaging the 'edit articulation only' button allows you to balance out the relative levels of the different techniques sampled for a single instrument by selecting the relevant articulation and touching up the fader position. You can also double click the value field for a manual input.

[Tips] The same technique can be used for any Instrument Edit. Engaging the EDIT ARTICULATION ONLY button is essential for envelope shaping and pitching drums without affecting secondary articulations (for example, a sidestick would retain its pitch if you tuned the drums in the real world). We will remind you when the time comes!

Leaving the key assignment aside for the moment, let's turn our attention to the more advanced Instrument properties, pitch, humanizing features and finally envelope shaping.

While the drums and cymbals recorded for the SUPERIOR libraries were carefully tuned before being sampled, there will be cases where pitching is required or desirable (musically or otherwise). Pitching manually is performed by using the knob in the pitch box of the Edit section. Simply click hold of the knob and move the mouse.

The value is in the format octave:semitones.10th so for example -1:5.5 will pitch the samples 1 octave 5 ½ semi tones lower than the originals, since it is preceded with a minus sign.

Please rotate the button now and note the LED above the knob. It indicates user action is required. This is because while pitch adjustments can always be previewed in real time, this is merely a low resolution interpolation in order to give you a chance to audition the result before committing the value. When you are satisfied with the result you should commit the change by clicking the FIX button.

[Tips] Moving your mouse cursor away from the knob will allow finer control. If you require even more accuracy you can type directly a value by clicking in the input field and, should you just want to return to the default pitch of the instrument, a reset button is provided. You may also return to the previously "fixed" value by Control PC clicking / Command MAC clicking the pitch knob. And remember, the state of the EDIT ARTICULATION ONLY button affects what you pitch!

Next for review is the Envelope section. There are numerous practical applications for this functionality; it is a powerful creative tool as well as a flexible way to simulate real world interaction between a drummer and his drums (such as cymbal chokes). It can be used to great effect to gently fade, gate or otherwise shave the tail of the samples, or their attack.

To start using this feature, please engage the ON/OFF button in the right hand side to enable the envelope shaping function applied underneath: 

You can manipulate the samples' overall envelope and therefore their presence over time, as they are fed to the sampler's output. You can affect the following parts of their envelope: Attack, Decay, Sustain, Hold and Release.

The Attack affects the samples very start and is typically used to soften the sound, for example to simulate more realistic cymbal swells.

The Decay is the typical drop from the initial attack point, to a Sustain volume, which defines the relative level the envelope should, as much as possible, maintain until it fades away, 100% meaning no alteration to the samples intrinsic volume.

The Release parameter controls how quickly the sound will then fade from the sustain volume to digital silence. The Hold parameter specifies how long the sustain volume should, again as much as possible, be maintained. Last, note that an Offset value is available to shift the overall envelope in time.

To manipulate these values, simply click and drag one of the four anchor point in the curve area. You can also Control [PC] / Command [MAC] click an anchor point to give it focus and double click the value field to type it in manually.

Conveniently, the values set can be specified as a relative measure of the length of the samples or an absolute measure of time with the Ratio/Time control. Furthermore, the result can be user controlled by selecting the Note OFF option. Using this method, you can control the effect in real time by holding down the key on your keyboard to create cymbal chokes and snare rolls of varying length without the need for specialist equipment.

SUPERIOR will also respond to aftertouch MIDI messages sent by capable edrum modules if needed (see the "Live Applications" chapter later on in this manual for more information).

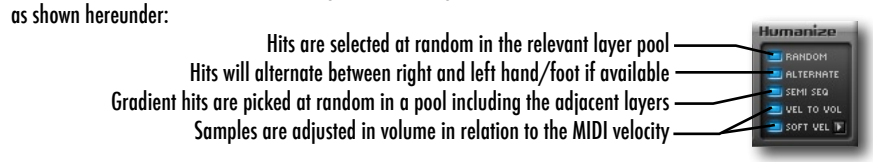
[TIPS] Once again, remember that you can edit a single articulation independently from any others. Simply toggle between the Instrument and Articulation modes as discussed previously: 

And don't forget to save your favorite envelope preset for later use on other instruments, for example to apply a carefully dialed in 'choke' from one cymbal to another.

The last aspect with respect to Instrument properties are the Humanizing features.

As already stated, every Instrument in the SUPERIOR libraries was sampled at many different intensities and utilizing many different techniques. All the resulting sounds however are only useful if the sampler can make use of them in a meaningful way, free of obvious repetitions and patterns that the listener can easily pick up.

Randomization and other pattern breaking functions are grouped in the 'Humanize' section, as shown hereunder:



<Random> applies to all layers populated by at least 2 samples (see the chapter on Resource Management for details). When this option is OFF hits are played back on fixed velocity which may in some cases be of use if you wish to trigger a particular sample .

<Alternate> works by redirecting every second request assigned to the Right subpad to the Left one, and vice versa. In other words, a sequence such as RRRRRR will be triggered as if RLRLRL had been received. This feature will be of particular interest to edrummers, where a single note is sent regardless of the limb used to strike the pad.

<Semi Seq> adds extra randomness for gradient hits. When this option is ON samples are picked from the layer associated with the incoming MIDI as well as neighbouring layers (1 or 2 either side depending on instrument). This allows for low layers population while still retaining adequate variation.

Finally <Vel To Vol> ensures the adjusting of the sample volume within the range assigned to a layer. It obeys a simple relationship between hit intensity and incoming MIDI velocity. This way no two MIDI values will have exactly the same output (two adjacent MIDI velocity values in your track may trigger the same sample, but not at the exact same volume).

<Soft Vel> (collapsible) is mainly useful for legacy SUPERIOR libraries to compensate for the lack of Soft samples on some instruments. In a nutshell it specifies the threshold the 'Vel To Vol' option kick into effect. So, if you are unhappy with the response of the instrument at low velocity, you may want to experiment with this setting.

[Tips] There should be no reason to disable the Humanize functions as they are included to ensure reproducible output from projects created using the original dfh SUPERIOR. Our advice is to keep them ON at all times.

3.4 Key Assignments

While the MIDI Manufacturers Association (MMA) established a General MIDI Standard Percussion mapping in the early 1980's (as well as a later revision and mobile applications derivative), which is relatively common and in use, it is fair to say that it is inadequate for today's drum samplers.

This is a widespread issue for software developers, and unfortunately many have chosen to disregard any compatibility with the existing formats, including the General MIDI standard itself. On the other hand, Toontrack has made every effort to optimise their users' workflow through the use of a GM derived format called GM Extended.

The advantage of GM Extended is that users familiar with GM already be familiar with how to access the essential parts of their kit. Best of all your GM compliant drum tracks will play back properly right away! The only restriction is that Drums and Percussion are separated in distinct frameworks to allow the entire range of MIDI notes to be used for the extra articulations required to provide all the subtlety expected from a modern drum sampler.

You will find the MIDI mapping for specific sound libraries in the Help menu accessible from the SUPERIOR interface. We have also included a 'GM Extended Core Mapping' chart at the end of this manual so you can quickly pick up the most important key assignments in use in most of the Toontrack products.

Superior 1 users have not been forgotten and can also access the original 'Drummer' (and Percussionist mapping) should they have legacy projects to complete, or simply want to continue using this mapping. We do, however, recommend using the GM Extended mapping as this will ensure the best overall compatibility with other products in our drum sampler line as well as basic interchange of data with GM users you may come to collaborate with in the future.

In addition several useful formats are available from the 'MIDI > Note Mapping' submenu found under the 'Presets' menu in the lower part of the Mapping window:

If the available formats are not suitable you may, of course, remap any instrument as you need, as explained below, but please bear in mind that your changes may complicate the exchange of MIDI drum parts with non Superior users.

There are three distinct ways, and two places in the SUPERIOR Drummer's interface you may use to re-map instruments: by manual input, through a 'learning' process of the incoming MIDI stream, and last but not least by drag and drop onto the virtual keyboard.

It is worth noting that only the drag and drop method requires you to be on the mapping page, the other methods being available from all the other windows, in the Instrument section in the bottom right corner of the interface.

In the Instrument section, select the Instrument and Articulation desired. The current mapping will be visible in the key field. If several note assignments exist for this particular articulation, you can review the list by Right [PC] clicking / Control [MAC] clicking the field.

You may add notes that you wish to use to trigger this instrument by typing them in. Click inside the input field and type the desired value.

On the Mapping window, the manual input of notes is almost identical with the sole exception of selecting the Instrument and Articulation. The former works exactly the same as it does on the Construction page.

Note that multiple selections are not taken into account when changing the mapping, and the Instrument your action will affect is the one noted in the section to the right.

This is also where you select the Articulation to remap, by Right PC clicking / Control MAC clicking it. The currently selected Articulation will appear in dark orange. Again, while multiple selections are possible, only one Articulation at a time can be remapped.

Articulations are color coded, both in the Articulation list and on the keyboard to offer a quick overview of the currently selected instrument's mapping: orange for selected (target of user actions), blue for those assigned to one or more MIDI notes, and white for those currently unassigned. There is a further color used that we will discuss in a later paragraph, to avoid any confusion at this stage.

The following shows what the equivalent keyboard might look like in the case of our example snare drum:

Note that the color scheme translates to the keyboard. Here, white keys represent those free of assignment, however, and do not correspond to the unassigned Articulations that may be visible in the Articulation list. Grayed out notes are those assigned to instruments not currently selected.

As you might expect, SUPERIOR Drummer will allow you to drag and drop an Articulation directly onto the keyboard. Simply select it as described earlier in this section, and drag from the list onto the desired key. Assignments are effective as soon as you release the mouse on an unassigned (white) key, otherwise you will be asked if you wish to create an entity called 'MIDI node' (not to be confused with MIDi note!). For the time being, choose to Replace the existing assignment. MIDI nodes will be covered in the next section of this manual.

[TIPS] Remember that the currently selected Articulation, or keys on the keyboard appear in orange. So if you wish to know if it is assigned or unassigned, you must make another selection to reveal its status. Note also that Articulations with multiple notes associated with them will display all of their assignments on the keyboard. Click the small arrow to the left and right of the keyboard to reveal lower and higher octaves respectively.

You may remember the Articulation preview available from the Construct page. The good news is that you can also click the instruments for instant preview, at a fixed velocity. The Better news is that you can also (left) click the Articulation name in the list to hear what it sounds like at full force.

The best news of all, however, is that access to the discrete sample layers can also be accessed from the Mapping page, in fact with additional information and conveniences compared to the velocity sensitive pad found in the Instruments section featured on other pages (or the 'Classic' window, with its multi pad layout), using the 'Advanced Note and Node Preview tool' or 'slide bar' for short:

To use, select the desired note on the keyboard or Articulation in the list, then slide across the bar pictured here above while holding your mouse button down. The display to the right will indicate the velocity associated with the playback (and position on the bar).

You can control the rate at which sounds are repeated with the knob to the left of the preview bar. You can also turn the arpegiator off if you prefer a 'one off' triggering system to preview sounds.

If you need help with identifying what notes your drum parts utilize, you will also be interested to know that the keyboard will animate as incoming MIDI is received. This can be particularly useful in this scenario, especially if you slow down your sequencer enough to clearly isolate the part of the pattern you are trying to map to play the correct instrument (and more specifically Articulation).

The last, and very convenient way, to map Instrument's Articulations to MIDI is the 'Learn' function, which assigns the next incoming MIDI note message to the selected Articulation.

This method works best in combination with a hardware controller, such as a MIDI keyboard or electronic drumkit, but technically the source MIDI stream can originate from your sequencer application. Only the first note message will be retained however so it is recommended you use another method to map a sequenced drum part.

To assign an Articulation in this manner:

1) Select the desired Instrument, then Articulation in the list as previously explained.
2) Engage the 'Learn' button. Note the 'active' state of the button (green light), meaning that the sampler is now listening for any incoming MIDI messages.
3) Press the desired key on your keyboard or strike the pad on your drum controller. The 'Learn' button will return to its initial state.
4) Verify that the desired key is triggering the Instrument and Articulation that you intended.
5) Repeat the process for any other note or Articulation you would like to remap.

Note that, technically, a key is always assigned to an Articulation, not an Instrument. It is therefore necessary to select the correct Articulation before proceeding with assignments. You can use the 'Remove' button to clear the currently selected note if you want to make sure that the old assignment has no effect on this particular instrument.

Still on the subject of MIDI mapping, X-Drums deserve a short explanation.

Although there is nothing stopping you from individually mapping the Articulations of your X-drums, these are somewhat different in that they are, typically, used to replace part of the core library or expansion. They may also be additional instruments that should work alongside existing ones, whichever may be your particular case. To speed up the process of MIDI assignment of X-Drums, SUPERIOR Drummer features several X-Drum mapping related functions, available in the X-Drums section (all windows except Mapping window):

- Steal Current: this command "steals" the MIDI mapping currently in use by the equivalent instrument in your base kit and assigns them to this X-Drum. This option is useful when you want to replace an instrument in your base kit with an X-Drum. This process is irreversible.

- Steal Default: this command enforces the MIDI assignment for the instrument (articulation) as mapped in the sound library to which it belongs to. Be aware, however, that the key assignments may overwrite parts of the existing instrument mapping. This process is irreversible.

- Steal Second Position: this command conveniently maps the most common instruments so they can be used as a secondary drum of the same type. This is particularly useful and effective for adding a secondary snare, kickdrum or hihat. In effect, this extends the GM Extended mapping by implementing fixed assignments and provides an X-Drum standard that guarantees an easy way to share your drum tracks with other SUPERIOR users. The assignments for secondary positions can be found in the Appendix at the back of this manual.

[Tips] Again, you will find MIDI configuration charts detailing the key assignments for all SUPERIOR compatible libraries in the Help menu. Use them to find your way around or change the key mapping to your heart's content. It is important to note however that only part of these maps are GM compliant. Specifically, only notes 35 to 59 should be used if you plan on exporting the song for sharing with others. Alternatively, you can use Toontrack's Software Tool, EZplayer pro, to convert your tracks before sending, or recommend it to the people you work with.

That's about all you need to know about mapping Instruments. Of course, do not forget to save your custom mapping if you wish to use it in other projects, or share with other SUPERIOR users. MIDI presets can be manage from the 'Presets' menu just above the keyboard, and X-Drums specific mapping from their dedicated section, as previously described.

3.5 MIDI nodes

SUPERIOR Drummer certainly has a few tricks up its sleeves, yet none perhaps come close to the creative power of the MIDI nodes. MIDI nodes are combinations of articulations, with no restrictions over the instruments or articulations that compose them, called 'members'. In fact, you can even incorporate MIDI nodes within MIDI nodes for fairly involved triggering schemes!

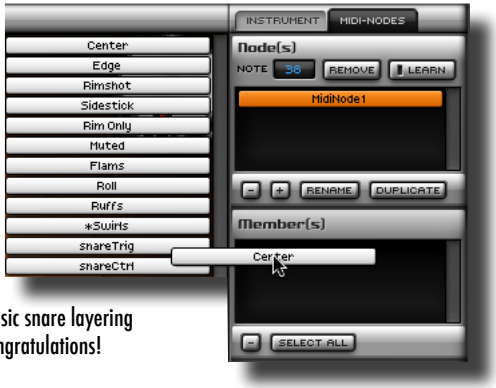
The best way to learn how to use MIDI nodes is to take an example, and in this instance we will be using one of the included presets, called 'X1-snare Stacking', which, as the name implies, aims to provide a snare sound made up of two snare drums, with a slight twist that we will discuss in the next section. Do not select the preset as we will walk you through a step-by-step to yield, or at least set you on your way to make a variant that you would like to use in your productions.

The very first step for this exercise is for you to add an X-Snare (X-Drum assigned to a snare). It does not matter which library it is taken from, you can use one from the core library as long as it is different from the one currently in your base kit.

Next, access the Mapping window and click the 'MIDI-Nodes' tab on the right hand side (pictured to the left)

Note the '+' sign underneath the first empty box. Click on it to create a MIDI node, rename it if desired, and assign a note to it using any method you prefer (manual input, learning, or drag and drop onto the keyboard).

Next, Right [PC] / Control [MAC] click the X-Snare in the Studio part of the window, and click and drag from the very first line, releasing the 'center' articulation into the members box as per the following screenshot:



Now repeat the process with the main snare 'center' articulation.

This is your basic snare layering completed, congratulations!

Note that keys that are assigned to a MIDI node appear in pink on the keyboard. In addition, MIDI node members that have no MIDI keys assigned to them will equally be displayed in pink in the various Articulation lists found on the mapping window.

Try to change the velocity range the two Articulations are triggered on, and preview your result with the 'slide bar'. For example, a range of 0-125 for one of the snares would leave the other completely in charge of the harder hits.

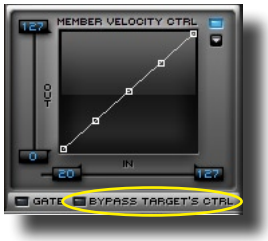
3.6 Velocity Controls

SUPERIOR Drummer allows you to completely customize any of the included instruments' response to your liking. You may manipulate their response curve graphically, gate or restrict their dynamics, and more.

Each Articulation has a set of Velocity Controls that can be used to transpose the incoming MIDI velocities to new values. In addition, members of MIDI nodes have an additional set of Velocity Controls that can be used to process the incoming MIDI data in the exact same way.

The Velocity transformation of MIDI node members is applied first, before being relayed to the target, a discrete Articulation, or another MIDI node. If the target is an Articulation, the MIDI information will therefore pass through two independent sets of Velocity Control units. This may not be desirable, and for this reason the Velocity Ctrl section belonging to MIDI node members allows you to bypass the target Velocity Ctrl section.

The screenshot to the right shows a Velocity Control section for a MIDI node member, identical in every aspect to the Velocity Control section of an Articulation, except for the 'bypass' button just mentioned.

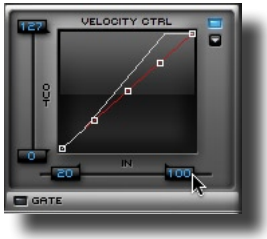


The graphical representation available plots the incoming MIDI velocity on the X axis and the velocity that will be applied to the sounds associated with the incoming note on the Y axis.

Manipulating the response curve can be performed in two ways: by dragging sliders corresponding to velocity thresholds and limits, as explained below, or by pushing and pulling the 5 handles provided.

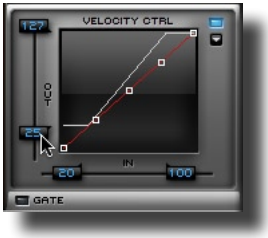
You may remember from the Introduction right at the beginning of the present manual that samples are organized into soft, gradients and hard hits. Soft being triggered from velocity values 1 to 20, gradients from 21 to 126, and hard at 127.

These are default values that can be changed to better suit your needs, however. The example shown to the right would have a net effect of triggering the hard hits from any incoming note with an associated velocity of 100 or above.



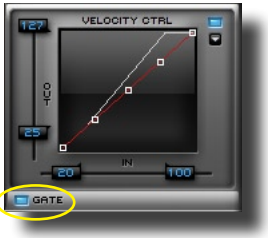
You can of course apply the same principle to the soft hit / gradient threshold. Drag or type in a value by clicking on the existing one.

Using the vertical slider on the left of the graph, you may also restrict the dynamic at the top end by bringing down the 'HI' limit, so that no value above a certain level reaches the target Articulation, or you may raise the 'LO' limit to enforce a minimum value .



The example shown to the right would have a net effect of transmitting a minimum value of 25 to the target Articulation - in this instance, rendering access to the soft hits impossible (since the soft / gradient threshold remained at the default value of 20).

And you can even 'gate' the values below the LO limit, filtering them out entirely:



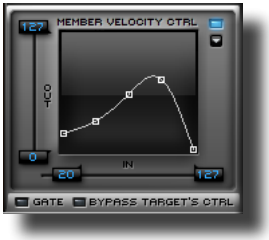
You may wonder what practical use these features have, so let's look at a few real-world cases, relatively common in live application involving electronic drums in fact.

1) your drum pad may not be sensitive enough,
   a) no matter how hard you hit your pad, the velocity in MIDI is very low. Lowering the hard threshold would help in this scenario.
   b) the lower velocity value observed is way above what could be considered normal, triggering the gradient hits, soft being skipped. Raising the soft threshold would help in this instance.

2) your drum pad may be too sensitive,
   a) tapping the pad lightly results in abnormaly loud hits. A custom curve probably would be necessary, but you may want to raise the soft threshold quite significantly as a quick fix.
   a) your sequencer registers low velocity MIDI events that trigger samples in SUPERIOR Drummer at very low volume. Raising the LO limit and engaging the gate would take care of the extraneous data.

These are mere examples for your consideration. Remember that dialing in a fined-tuned combination of all of the controls is probably the only way to satisfactorily tailor the instrument response for your own playing style and hardware. Curves offer a more refined approach and complement the coarse actions possible using the thresholds and limits.

Going back to our snare layering MIDI node (see MIDI node section of this manual) to illustrate how curve works (you may want to load the 'X1-Snare Stacking' MIDI node preset now if you discarded the previous stages of our preset making exercise), drag downwards the right-most handle in the graph to modify, as per the screenshot pictured to the right:

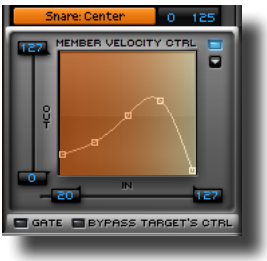


Preview the effect on the higher velocities using the 'slide bar' (solo the snare to clearly hear the result of manipulating the curve).

What you have created is a rapidly vanishing snare towards the high velocity value sent by MIDI.
It's important to understand however that this is not a 'volume' control, you are in this instance triggering progressively lower energy hits as the velocity increases (a situation that would not exist in the real world).

This is an interesting curve alteration in our quest for a refined blending of the snares we have combined in this MIDI node, however.

Taking the action a few steps ahead, the next screenshots show the final result of what could be considered a useful virtual snare sound. This is the final 'X1-Snare Stacking' preset mentioned in the MIDI node section.



Essentially, what this preset provides is a dominant snare in the lower velocity register, progressively leaving center stage to the X-Snare.

Observe that the X-Snare is in fact muted for the first tier of the curve, only coming in at velocity 35. At the other end of the graph it becomes rapidly the only audible sound - and at velocity 126 it is in fact completely exposed and unsupported.

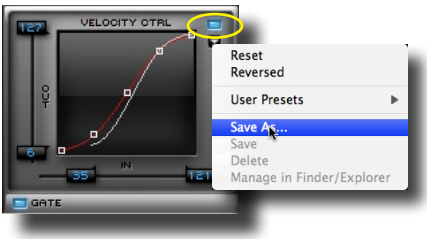
(note that the screenshots included herein have overlay colours, this is for illustration purposes and is not a software feature)

As you can see, there is a lot of fun to be had with MIDI nodes, but remember that the curve manipulation is available for the individual Articulations as well as members of MIDI nodes.

You can therefore use the same principle to correct the response of an Instrument (or more precisely one of its Articulations) without having to create a MIDI node.

Feel free to experiment with your favourite snare drum(s) or MIDI nodes of your own making. Once you have crafted your preferred instrument response, do not forget to save it using the preset menu found in the top right corner of the Velocity Ctrl section:

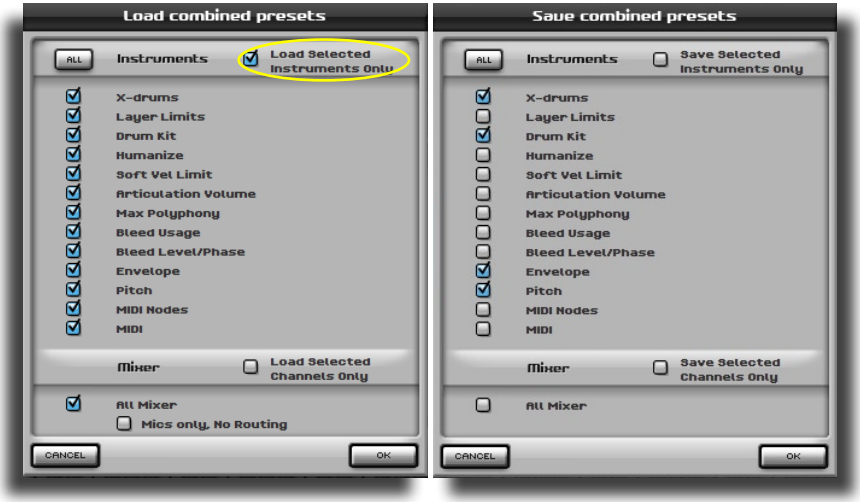
Note that you can also bypass the velocity transform as a whole using the button just above the preset menu (for example, to A/B the situation before and after the correction).



[Tips] You can reset any of the controls described in this section (and most of the controls in SUPERIOR Drummer more generally), including curve handles, by Control PC clicking / Command MAC clicking the control.

3.7 Combined Presets

Think of the Combined presets as "super-presets" with which you can save or recall a group of Instrument properties and/or Mixer configuration. By choosing 'Combined Preset > Save (as)' you can specify which part of your custom set up should be saved. You can even specify which Instruments (or Mixer channels) should be saved by pre-selecting them using the methods described earlier in this manual in the context of editing their properties:



Don't be intimidated by the list of options in the above screenshots, many should look familiar at this point of the documentation and the remaining will be discussed in the next chapter (this is not crucial to the present discussion). We'd like to illustrate the concept by providing a real world scenario, to demonstrate the powerful flexibility at your fingertips.

Imagine that you have created a set of Toms with carefully tamed resonance, all musically tuned for a particular purpose. This set comprises the 5 toms slots in the default library and an additional floortom, a 'detuned' version of the lowest in pitch among the 5 original toms. Your ideal 'prog rock' kit in other words.

Naturally you will want to save this work for a future session. Selecting the toms, including the 'X-Tom', in the studio view (using the SHIFT key), you therefore select 'Load/Save > Combined presets > Save As', ensuring in the ensuing dialog that X-drums, Drum kit, Envelope and Pitch' are selected. And of course the 'Save Selected Instruments Only' option.

[Tip] Note that there is nothing stoping you to save the whole kit (including X-Drums) instead by leaving the 'Save Selected Instruments Only' unchecked. Remember that you can always recall Instruments properties selectively when you load your combined presets. In fact there is nothing stopping you hitting the 'All' button either, when saving the preset, knowing that you can also recall properties selectively at a later stage. It is entirely up to you how you wish to manage your presets!

[!] Note that Load and Save Selected Only options can not be used for X-Drums, they are always considered a single entity and therefore will replace the existing X-Drums already present in the project.

3.8 Load/Save projects

In addition to the many preset types and Combined presets available, you may export a full snapshot of your configuration, to archive independently from your project or share with users relying on a different host applications to develop their own song arrangements.

Using the Save (load) project entry, it is therefore extremely easy to exchange files with other SUPERIOR users and guarantee consistent playback across systems. Even if you have no intentions of sharing your configurations with others, and despite the fact that hosts programs normally store this information for you, we advise you to keep a back up along with the rest of the files relevant to the project for extra security.

[Tips] You may load SUPERIOR saved files (.S20) as a Combined preset, allowing to extract exactly what you are interested in importing into your own project. Simply select 'Load Project as Combined preset' from the Load/Save menu and browse to the location of the .S20 you wish to load. Confirm the selection.

4 MIXING THE KIT

4.1 Mixer Channels

SUPERIOR Drummer is a microphone-centric instrument. This means that what you control in the Mixer are not instruments level, but rather the sound of all the instruments in the microphones present in the room. Adjusting a channel strip in the Mixer will not only affect the direct signal from the drum but also any other instruments that may bleed into it.

A new feature in Superior Drummer is the FX INSERTS section. This is where the processing for the channel occurs. The FX chain runs in sequence from top to bottom. The expertly designed effects from Sonalksis you have available are as follows: 5-band equalizer, Hi/Lo pass filter, a Gate, a Compressor and Transient modeller (see the FX Guide available from the Help menu for description of the controls available).

Clicking an insert will open its window on your screen so you may tweak the available parameters, save and recall your favourite presets. You can also use the channel presets menu located at the top of the inserts stack to call global processing FX chains. Click 'Bypass' in the FX window to temporarily disable an effect. Shift-Right [PC] / Shift-Control [MAC] click one of the insert to temporarily disable the full FX chain on the channel. You may drag insets to a different slot or channel and copy a particular FX by holding the Control [PC] / Option [MAC] key down.

The next section is the bus send section. Here you may separate the direct signal from the bleed and assign each to an available bus. Or send the entire signal for parallel compression, to name but one scenario. To do this, choose the bus you would like to send the signal to from the drop down menu.

Click the small LED next to the Direct and Bleed labels to stop the associated signal being send to the bus. You may also affect their panning independently if you so desire.

By default the relative levels between bleed and direct signal will be preserved when you adjust the faders but you may specify different volume if you wish, by clicking the "Link" button, typing the values manually for finer control.

You may also send the part-processed signal from a channel 

Next for your consideration is the Bleed Control section. This feature will require some explanation but for now just know that you can affect how instruments bleed into the microphones using this section.

You can also 'gate' the signal fed to the channel strip via the 'Fade' slider.

The following sections should be fairly familiar to you if you have any previous experience with hardware mixers or some exposure to the world of Digital Audio Workstations. Pan controls, channel faders, mute and solo switches are ubiquitous in about every musician's surroundings and need no further instructions.

For advanced users, note the phase reversal button that will allow you to correct any phase cancellation you may suspect as a result of rerouting signal to busses and processing.

[TIPS] Click the dB field to type a value by hand. Remember that you may select several channels to be affected by your actions. Change perspective by affecting all microphones with the  button already introduced.

It is worth noting that the description of the channel strips sections detailed on the previous page applies to all channel types with the exception of the bleed controls, which can only be found on microphone channels.

There is one extra control at channel strip level and that is the routing to outputs.

By default SUPERIOR outputs into your host as any stereo instrument you may be familiar with. It can, however, be addressed as a multichannel instrument in most compatible hosts so that further processing can be applied, allowing you to use your entire arsenal of effects from within your sequencer.

Clicking the 'Output' field at the bottom of the channel strip (in orange letters, over black), will reveal the possible outputs for this particular channel. Microphone channels can be routed to any bus or output. You can also disable the post fader signal and rely solely on the bus send sections if you wish.

Busses, on the other hand, can only be routed to other busses or outputs, to avoid audio feedback. SUPERIOR will always prevent you from routing in such a fashion as to feed a signal back to its parent channel at any point and will tell you to change your routing accordingly. The same goes for the channels send section found on busses, so there is always a helping hand.

Last, unsurprisingly, outputs have fixed routing since they sit last in the audio path, allowing them to directly interface with your host program.

[Tips] Choose the Multichannel preset outlined in yellow in the screenshot on the right to quickly separate microphones in your hosts, sending all post fader signals to up to 16 stereo outputs. You can, of course, manually overwrite any individual channel routing after that if you have an alternate routing scheme you feel more comfortable with.

Note that you can also rename channels by double clicking the descriptive label. This is particularly useful when making use of busses and in need of identifying their purpose at a glance.

The Mixer is indisputably the primary window you should reach for hands-on mixing. But, day-to-day operation sometimes involves more casual adjustments, like the need for a quick listen of a channel in isolation, to name but one example. In these instances, switching to the Mixer window may seriously impair your workflow by removing access to the Studio window and Advanced Instrument properties such as the Envelope designer.

For all these reasons, SUPERIOR allows you to access a single mixer channel through the EZ Mixer at the bottom of the interface.

Essential controls can be found here, from volume control and panning to global bleed level and more specialised controls already described in this chapter. It also features a status indicator for inserts.

In addition to these useful shortcuts there is an extra parameter that will allow you to control the phase alignment of the Ambience microphones: 'Amb Corr' or Ambience Correction. By using this setting you can shift the ambience microphones signal up to 10 milliseconds. This is equivalent to moving the microphones 3.5m closer to the drum kit at the maximum value.

4.2 Refined Microphone Controls

In many respects, SUPERIOR aims to preserve the studio experience. Pushing the boundaries of realistic drum tracks within the context of a virtual instrument offers possibilities that can greatly enhance your productions.

Unsurprisingly, therefore, the SUPERIOR instrument brings you control way beyond what is possible in the real world, with the inclusion of comprehensive leakage controls. Using extremely refined microphone level controls, you can do away with the time consuming EQ/gating work required to isolate your drums, if you so decide.

You may remember in an earlier paragraph that we introduced the BLEED CONTROL section. So, let's get back to the Mixer and take a closer look at the very useful Bleed controls. Scroll to the overhead channel strip and click the 'Edit' button in the BLEED CONTROL section. The following pane will appear on your screen:

This is really where SUPERIOR shines. Not only can you relieve your system resources by cutting some of the less important bleed from specific microphones (1), you can also specify the exact amount of bleed for each instrument (2). You can also phase reverse any instrument independently of the others (3).

All Instruments will be listed as rows on the blue background. X-Drums will appear at the bottom of the list and will be updated automatically as more are added or removed in the Construction window.

Let's turn off our Kick in the Overhead. Click the 'ON/OFF' switch, as shown in the screenshot on the left. This can not only solve a potentially problematic sonic issue but also unloads the samples concerned, saving you valuable RAM. You should note that this will not, in effect, remove the Kick from the overhead if you use the offline bounce feature discussed later in this manual.

If you wish to adjust the bleed level of an instrument to any degree, including how it translates in the files produced by the offline bounce, simply drag the relevant slider towards the left. This is useful, for example, to lower the volume of the snare drum if you deem it to be overpowering in this particular microphone.

Note that some instruments have a little 'c' (for 'close') in front of their name. This signifies that they are the primary source intended to be picked up through the microphone during the recordings. As such, you cannot remove them entirely from the microphone by clicking on the bleed switch to the left of the label. You can, however, lower them in volume in respect to the bleed in that microphone by dragging the slider underneath the instrument label.

[Tips] The microphone bleed controls, 'switch' and 'slider' function independently. If you require to adjust the bleed of an instrument, you do not have to load the samples in RAM first, simply drag the appropriate slider to adjust its volume in the offline bounce files.

Needless to say this is a very powerful feature as it can be applied to any instrument in any microphone, giving you total control over your sound. You can change multiple bleeds in one go by using the selection shortcuts previously discussed in relation to channel strips and drag across the instruments label to select; SHIFT click for consecutive selection; Control [PC] click / Command [MAC] click to add or subtract to the selection. In addition you may Right click [PC] / Control click [MAC] an instrument label to select them all at once, or click the 'select all' button.

This can even be performed on multiple channels at the same time by combining the selection methods above and those described in the Mixer overview earlier in this manual. Select channels to be affected then pick the instruments you'd like to adjust, using any one of the Bleed Control sections of the selected channels, and drag left.

To help you quickly visualize the leakage status, whether a given microphone only contain direct signal or a combination of direct and natural bleed from the recording session, the Mixer uses the following color convention:

No bleed. This is typically the status of most direct microphones on first loading a drumkit, to minimize RAM consumption.

Part bleed. Only certain instruments are bleeding through the microphone. This is usually the status for secondary mics after adding X-Drums, again to avoid overloading your system.

All bleed. Bleed into the microphone is as extensive as possible. This is usually the starting situation for overhead and primary room mics.

It is worth clarifying, at this point, the 'Master Bleed' control. Found in the EZ Mixer as well as in the microphone channels BLEED CONTROL section, it acts as a simple global bleed volume control. Turn left to reduce the overall bleed presence to expose the direct signal more prominently.

The other useful corrective adjustment worth looking at again is the Fade Control. This might be desirable, for example, when EQing or compressing a snare drum track heavily. Such sound shaping often exposes the high end noise at the end of the samples summed in the microphone. The stacking of many voices in a single instrument can also lead to a noisy output.

Using the control going left, you can apply a linear fade that will affect all instruments played through that microphone, effectively 'shaving' the tail of the samples. The net effect will be a reduction in the residual noise that was introduced by allowing every instrument to ring in that microphone.

The Fade slider can also be moved to the right, where it will instead add a number of milliseconds to the length of the sound. This has an effect only on sounds that have been faded using the Envelope designer. The typical application is to make a hard fade sound more natural by allowing, for example, the Ambience microphones to ring a little longer, mimicking a real room response more closely.

It is important to note that other microphones remain unaffected. If you wish to affect the Release/Decay of a single instrument in all the microphones refer to the operation of the Envelope designer.

4.3 Microphone Management

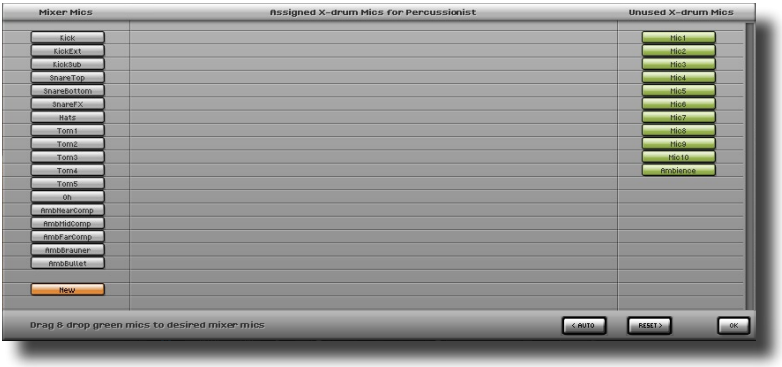
There is an inherent issue with mixing and matching instruments from different sound libraries as is now possible using the X-Drum feature; specifically, instruments in one library may have been recorded using a different microphone configuration from those in another. Recording sessions may therefore vary in how the engineer decided to set up the microphones around the room, what is closed miced, what is picked up by overhead only, how many Ambience microphones there were and their nature, etc.

SUPERIOR has been programmed to understand a high level of variability but sometimes the instrument brought into the Studio window is just too different from the main drumkit for automatic microphone detection to work well.

This is most notably the case when percussion instruments are added to a drumkit or when specialised kits are added to more standard instruments which may cause the X-Drum to sound in only a few microphones or none at all. In such instances, we recommend checking the Microphone Assignment section:

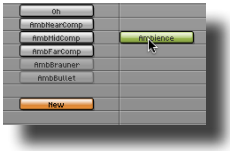
The screenshot to the left shows a typical scenario when importing percussion into a standard drumkit. Few of the Instruments will match and therefore the sound will be shallow or missing entirely.

Click the X-Drum's 'Microphone Assignment' button:

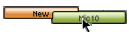


The column on the left lists all the microphones already present in the project. To the right, you will find the microphones that are currently unmatched, their output muted as a result. It is therefore important, in most cases, to assign all microphones to existing microphones or create additional ones if desired.

Simply drag microphones from the pool on the right to the desired match to the left: Note that microphones that are not a valid selection are greyed out, the defining criteria being that the microphones you match must be of the same type, mono or stereo.



You may also choose to create an entirely new microphone to be added to the project, complete with its own channel strip in the program Mixer. To do so, simply drag one of the microphones from the current X-Drum (already assigned or still among the left overs on the right hand side) on top of the work 'New':



A new entry will appear on the left hand side. Note that maximum of 32 channels can exist as part of a project, including the base kit. A stereo Microphone will count as two microphone channels.

If you change your mind and decide to reassign a newly created microphone elsewhere, you may delete the obsolete channel by clicking it and selecting 'Delete':

Clicking Auto is usually without effect since this procedure is attempted in the background on first integrating the X-Drum into the project. However, if at any point during the process you choose to start again by resetting the configuration to the sound library default, the automatic assignment may prove useful.

[Tips] Using this feature, you can add convenience channels such as an extra channel to control the Ride in the kit. To achieve this, unload the Ride from the main kit in the Studio window and add it back in as an X-Drum. In the 'Microphone Assignment' window, drag the OH microphone on top of the 'New' button.

5 THE GROOVE PLAYER

5.1 Adding MIDI content

As previously stated, SUPERIOR Drummer ships with a custom MIDI groove library that must be downloaded from the Toontrack website. Please download it now if you haven't already by logging into your Toontrack account.

Once you have downloaded the available material, or wish to add further official Toontrack MIDI packs, adding them to the Grooves window is extremely straightforward. All you have to do is to drag them into the 'Browser' and they will be installed and available for use immediately.

You may also add your own grooves, or appropriately formatted 3rd party MIDI packs.
To install non-Toontrack material however you will need to place them in the MY MIDIFILES folder, by double clicking the 'MY MIDIFILES' header in the leftmost column of the Browser.

Note that any material you wish to play back within SUPERIOR Drummer must be formatted as GM or Toontrack GM Extended and that the default note mapping should be used in SUPERIOR. If you suspect the wrong drum parts are being played back, double check that your material is suitably formatted and that 'GM Extended' is selected in the Note Mapping section.

5.2 Auditioning grooves

Finding the perfect groove could not be any easier. Simply navigate the Browser until you find a suitable pattern. Remember that what you are auditioning are MIDI files, not audio loops. This means that a close match can always be edited to fit exactly what you have in mind.

Still, browsing the library randomly may actually spark your inspiration, so it is entirely up to you how you wish to work with the SUPERIOR Drummer groove player.

Pressing Play in Superior as well as your sequencer, you will be able to audition all your grooves in the context of the song, at the right tempo! You can even get instant access to half-time or double-time variations of the groove by engaging the appropriate time factor: 

It is also worth noting that the SUPERIOR Groove Player allows you to listen to any MIDI at the internal tempo of the file, usually the tempo that best preserves the part's original feel, swing and groove. To hear the groove as the original performer intended, press the  button next to the play button. The internal tempo will be displayed next to the groove name for your convenience.

Once you have found a suitable groove, drag it into your host for further editing or hunt the next building block for your track inside SUPERIOR Drummer.

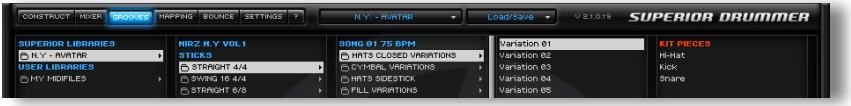
[Tips] Right PC clicking / Control MAC clicking a groove will toggle the Play button. Double clicking a groove in the Browser with play it a single time then stop. In addition to clicking on grooves while the Play button is engaged you can also use the navigation controls situated to the left of the groove display, just below the Browser.

5.4 Accessing Kit Pieces

In addition to auditioning your MIDI files as indivisible parts, the SUPERIOR Groove Player can intelligently extract and split the grooves into kit pieces, for example to separate kick, snare, hats.

Not only can you use this feature to audition single instrument patterns in isolation, you can also, easily and effortlessly, combine elements from different MIDI files to form exciting new beats.

To access kit pieces, navigate your library by selecting subcategories until you can see the 'kit pieces' header:



Note that this feature is not restricted to the MIDI supplied with this product and will work with any percussive MIDI files you add to the library. All you need to ensure is that they are mapped as per GM specifications.

Once you have found parts that you would like to use in isolation or recombine to form a new groove, simply drag them into your host.

[Tips] Multiple kit pieces can be selected by Shift clicking them.

5.3 Changing the dynamics

One aspect of the SUPERIOR Groove Player that is particularly useful is the ability to adapt the dynamics of a groove to fit the song and/or other grooves already selected for inclusion in your song.

It is indeed unrealistic to expect all MIDI content to be calibrated against an elusive reference so you will often come to a point where mixing grooves from library A with library B will result in unnatural transitions.

Also, you may simply just want a particular groove to be a lot more subtle than originally intended, or you may want to create a build-up, by progressively tweaking the dynamics of a short fill by placing multiple copies of the groove one after the other in your sequencer.

In all the above cases, simply twist the Velocity knob until the desired effect is achieved, softer to the left and harder to the right.

6 OFFLINE BOUNCING

Because of the high number of samples involved, playing back all the sonic subtleties SUPERIOR has to offer in real-time can be quite demanding on resources. For this reason the SUPERIOR instrument includes an 'Offline Bouncing' feature.

In essence, the 'Bounce' feature creates audio files from a MIDI sequence, utilizing all available leakage samples in the library by default. This means that no matter what channel bleeds the sampler is set to play back in real time, the result will be equivalent to having all instruments bleeding into all microphones, representing the full, extended pool of samples.

SUPERIOR will use the bleed levels you set in the Mixer however, regardless of whether the associated samples are loaded or not, and you, of course, have the ability to bounce the exact Mixer output into your host, including channel separation, should you wish to retain your processing. Using the various options available you can therefore retain the level of control required in any situation.

Before bouncing, you will need to decide between bouncing through the Mixer or to separate files representing the Mic channels. You will also need to decide whether you wish to include All Bleed available in the library or only what you have currently loaded and can hear in real time.

Using the 'Bounce through Mixer' option, you will produce one file per 'Output' and print the effect chains, using the entire sample set of bleed and layers population. If you wish to produce a more 'what you hear is what you get' set of files, simply unselect the 'All Bleed' option. The SUPERIOR bounce default however will produce 'raw' files, one for each Microphone in the project, with the full bleed experience.

Regardless of your preference, before you can produce a set of files, you must buffer the MIDI events, essentially delimiting the start and end of the section of your song you wish to print to audio as well as the timing and nature of the triggers in the desired segment.

Click the record button and play through the song, or extract, once.
Make sure you let all instruments ring to complete silence before stopping your sequencer.

[!] Your host program may require that you set the left and right locators at each extremity of the sequence before you can succeed. If the record button disengages straight away or before the end of the MIDI sequence, try to engage the 'record-start at MIDI' option in the SUPERIOR settings page.

Once the buffering step is completed, there are several options from which to choose. These not only affect the quality but also the number of files resulting from the process. It is important that you read this section to make the best of the feature.

First, you should decide whether you would like the files resulting from the bounce to be saved at 16 or 24 bit depth. The SUPERIOR sounds were recorded at 24 bit depth therefore this is the default. The 16 bit option requires less hard disk space but the sound will have a lower scope for dynamic processing.

Next enable the 'Split Direct from Bleeding' option if you wish to create two files per microphone, one containing the instrument in isolation (file with the suffix_close) and one containing all other instruments bleeding in that microphone (file with the suffix_bleed).

This feature allows for more flexibility at the mixing stage, but also requires more hard disk space and a large number of files to manage. This option is useful if, for example, you wish to vary the ambience during certain parts of the song using your sequencer automation capabilities.

At this stage you will have the option to separate the overhead microphones into as many files as there are 'cymbals' in the drumkit. All the other instruments (kick, snare, toms, hats, etc) will be consolidated into a separate file.

Some sound libraries in the Toontrack line may offer additional microphones available as optional offline features and over which similar controls are allowed. Click hold the selection box underneath the 'Split mic' header to find out what options are available to you for a particular product.

[Tips] Remember: all these options will result in extended flexibility but at the expense of the creation of additional files which will need to be accommodated in your mixing session. Our best advise is to experiment with the different options and decide for yourself the best combination for your workflow. Note also that the 'Split' options are not available when bouncing through the Mixer since your bus configuration is in effect.

Once you have picked your options, press the bounce button, choose name and locations for the files and the rendering of files to disk will start. A status bar will keep you informed of progress. Should digital clipping occur in one or more files, SUPERIOR will automatically re-attempt the bounce process at a reduced output volume. No action is required on your side.

[Tips] For added convenience importing into some host programs, you may choose to bounce stereo files as split stereo (as opposed to interleaved) using the 'bounce splits stereo' option found on the settings window. This option produces distinct files for the left and right channel. You may also keep the intermediate files when bouncing through the Mixer.

7 LIVE APPLICATIONS

A key feature of SUPERIOR Drummer in the context of live applications with E-drums is the transmutation of sounds, particularly the hi-hats samples as the great majority of drum modules nowadays can in one way or another handle continuous controller messages in result of pedal work on an appropriate device.

At a basic level E-drum modules will send different notes through MIDI when you hit the hi-hat pad, according to the position of the hi-hat foot controller. Alongside the notes assigned to open, close, and pedal (and optional intermediates) the module will also, in most cases, generate Continuous Controller information aka 'CC' with the purpose to indicate the position of the controller more precisely.

SUPERIOR Drummer is able to interpret the position of the pedal controller from the CC data and play back samples accordingly. For example, using SUPERIOR Drummer, you won't need to open your hi-hat and then hit the pad to get an open sound: if you hit your hi-hat when closed and then open it immediately after, you will get an open sound, through a gradual succession of open states, exactly as you would with an acoustic set.

We advise that you start your sessions by selecting the 'E-Drums' preset from the 'MIDI > note mapping' submenu as this pre-configuration is suitable for most modules available on the market and typically require very little tweaking. If, with the 'E-Drums' preset selected you are getting no sounds or the wrong sounds from one of more triggers linked to your module, see paragraph 7.1 and 7.2. If your triggers are correct but the pedal response is not optimal or uncomfortable, please refer to paragrah 7.3.

7.1 Pad Assignments

If you experience discrepancies between the sounds your module triggers and the ones that you expect to be triggered, play a simple pattern on your electronic drumkit and make a note of all the elements that do not produce the sound you expect or do not trigger any sound.

If the notes assigned by default to an instrument do not match the settings of your module, proceed as follows:

1. Select the Instrument > Articulation you wish to re-assign from the bottom right corner of the interface
2. Engage the 'Learn' button 

3. Hit your trigger pad

Repeat for additional pads that need fixing. This is the procedure reviewed in chapter 3 of this manual so we encourage you to refer back to it should you need a more detailed explanation.

If the Instrument is the correct one, but the response feel awkward, please review the calibration procedure described in your drum module's operation manual. You should also check the Velocity Controls section in chapter 3 for useful tip to adjust the curve response of the Instruments optimally for your playing/hardware combination.

[!] Note that if it is your hi-hat that you wish to remap, the Articulation to associate with your trigger pad should be 'HatsTrig' (or 'HatsTipTrig'), and not the discrete levels of Open. See the next section for additional details.

7.2 Hi-hat Mapping

If your module MIDI mapping does not match the default Hats mapping, you will need to configure it as per the procedure outlined below. The only difference compared to assigning a different type of trigger, as described in the previous section, is that there are several Articulations that must be set properly for the set up to be complete and appropriate: Closed Pedal, HatsTrig (plus optionally HatsTipTrig) and finally HatsCtrl.

The Closed Pedal value must match the note sent by your module when you play a "foot chick".
The HatsTrig values must match the notes (and ALL the notes) sent by your module when you hit your hi-hat pad.
The HatsCtrl value must match the MIDI Continuous Controller type that your module sends when your hi-hat controller position changes (CC04 and CC01 are assigned by default which should be adequate for most users).

In addition, if your trigger pad is capable of sending distinct note events to diffrentiate your playing on the edge and bow of the trigger (dual zone pad with appropriate module and cabling), you may also wish to split the notes sent by the module when you hit to pad to reflect accurately the zone it is being played on.

[Tips] You will need to assign ALL the notes that your module is sending, not just one. This is imperative to handle the hi-hats properly. The best way to ensure all notes are registered correctly is to record a short MIDI sequence and check in your sequencer what notes are transmitted and type them in manually.

If you wish to perform the calibration using the 'Learn' function, please proceed as follows:

Associating the Closed Pedal Articulation:

1. Select the 'Hats' from the Instrument section in the bottom right corner then the 'Closed Pedal' Articulation
2. Engage the 'Learn' button 

3. Generate a "foot chick" (move your foot controller from the up position to the floor)

Associating the HatsTrig Articulation:

1. Select the 'Hats' from the Instrument section in the bottom right corner then the 'HatsTrig' Articulation
2. Engage the 'Learn' button 

3. Hit your pad on the edge

Repeat for each controller position in which the module sends a different note as you hit the pad.

[!] Once again if your module sends different notes when the hi-hat pad is hit, for example 1 note when the controller is in the closed position and 7 additional for various degree of openness, you MUST assign ALL those notes to 'HatsTrig'.

Associating the HatsTipTrig Articulation:

1. Select 'Hats' from the Instrument section in the bottom right corner then the 'Hats**Tip**Trig' Articulation
2. Engage the 'Learn' button 

3. Hit your pad with the tip of your drumstick in the bow area of your pad

Repeat for each controller position in which the module sends a different note as you hit the pad.

[!] Once again if your module sends several notes, when you hit the pad on the same spot depending on the position of your hi-hat controller, you MUST assign all of these notes.

Verify the assignment for the HatsCtrl Articulation:

You should check the MIDI implementation chart that should be available from the manufaturer of your E-drum module, typically located at the back of the operation manual to ensure Controller data is transmitted as CC04 or CC01. If this is not the case then you will be required to type the controller type manually.

1. Select the 'Hats' from the Instrument section in the bottom right corner then the 'HatsCtrl' Articulation
2. Click inside the 'Key' field underneath the Articulation menu
3. Type the controller type as 'CCxx' where xx is the controller type appropriate for your module

[!] Some module do not support Continuous Controller transmission at all. In this case you should assign the note being sent by the module when in the closed and open position, typically unique, to the 'Closed' and your prefered 'Open' Articulation in SUPERIOR ('Open 2' is recommended).

7.3 Pedal Correction

Unfortunately, foot controllers that send a CC stream that can be plotted as a straight line on a value vs pedal position, usually referred to as a linear response, are rare. It is also possible that your own style of playing demands a specific response curve for you to be at ease and the performance representative of your best efforts. For all these reasons it is important to know how you can affect the Hats Controller response from within SUPERIOR, through the modification of the 'HatsCtrl' Articulation.

But before we go into the finer details, please note that a number of presets are included under the 'MIDI > Pedal Correction' submenu available from the Load/Save menu at the top of the interface.
We suggest you try all these optins, and decide which one is the most appropriate choice for you.

If none of the presets included offer a satisfactory experience, or even if you find one that seem appropriate, we recommend you read the following discussion, as understanding the underlying factors may help you find an optimum configuration.

Essentially the data sent by your E-drum module will be as a succession of values comprised between 0 and 127, where zero corresponds to fully open and the maximum theoretical value of 127 to fully closed (in fact, more than closed: a controller should ideally require a certain amount of physical pressure to reach this value). Let us repeat, a high value is when your foot is down and a low value when your foot is in the air - not the other way around!

A typical issue, although not necessary widespread, is for controllers to send a maximum value inferior to 127. If this value is less than 120, SUPERIOR will be unable to produce closed sounds (let alone 'Tight' sounds). To remedy this situation you should try to set the 'HatsCtrl' Hard Velocity Ctrl to a value slightly under the maximum value you can register in your sequencer when applying some reasonable pressure on the controller:

A more common issue is a distinct jump in CC values from low to high when stepping on the pedal as progressively as possible. In effect, the window of opportunity for intermediate open articulations is almost non existent and the impression is that only one level of Open is available. To help in this scenario, try adjusting the 'HatsCtrl' Soft Velocity Ctrl around the current value.

The screenshot to the right is an example of corrective measures to try to compensate for a less than optimal response from a generic foot controller:

Experimenting with the Hard and Soft values should improve your experience greatly but remember to engage the 'Edit Articulation Only' switch to restrict your actions to the 'HatsCtrl' response.

(Tip) Setting the Velocity Ctrl 'OUT' upper limit to a value of 125 or below will, in effect, prevent any 'Tight' sounds from being accessed. This may however be desirable in some cases if your controller is too prone to trigger them.

7.4 Positional Sensing

Positional sensing is addressed through Continuous Controller data, typically CC16. It is automatically enabled through the use of the 'E-Drum' preset mentioned at the beginning of this chapter. In the unlikely event your positional sensing capable module does not trigger tonal variations when the edge of the pad is hit, proceed as follows:

1. Select the 'Snare' from the Instrument section in the bottom right corner then the 'SnareTrig' Articulation
2. Engage the 'Learn' button
3. Hit your snare pad 

4. Select the 'SnareCtrl' Articulation
5. Type in the appropriate CC type manually in the 'Key' field

7.5 Cymbal "Chokes"

The SUPERIOR instrument can automatically treat your module Key Aftertouch messages to choke a cymbal. To enable this function for a particular cymbal. please proceed as follows:

1. Select the appropriate Cymbal 'Crash' Articulation
2. Switch the 'Edit Articulation Only' filter ON
3. Enable Envelope section
4. Toggle the switch to the far right to Aftertouch
5. Set the 'release' and 'hold' parameters to taste

8 RESOURCES MANAGEMENT

The next few pages give essential tips and recommendations for smooth operation of the SUPERIOR Drummer.

[TIPS] Please read this chapter in full: operation of a sampler requires an understanding of the demand on resources in a platform specific environment. Your time reading this chapter may avoid many frustrations!

As you may know, a sampler is essentially a DJ in the computer world: upon receiving MIDI information, it will play back the sounds in the order in which the requests have been received, just like a good DJ is supposed to! The main difference is the speed at which the requests are required to be honored. This is obviously an overly simplified picture although other comparisons could be drawn to great effect.

The fastest way to feed the sound to the audio engine of your host program is to store the samples in physical memory, otherwise known as RAM, for instant availability. This can be very demanding on resources however. In an ideal world computers would have an unlimited amount of memory available and you would be able to store multi-gigabytes libraries entirely in RAM. This is of course not the case.

To greatly enhance the user experience, Toontrack Music's revolutionary *Toontrack Percussive Compression* (TPC), an on-the-fly compression/decompression technology, ensures the memory footprint remains as low as possible, without compromising playback quality. In addition, memory requirements can be controlled quite comprehensively, as will be described in the following pages.

The aim of this chapter is to show you how tailor the library to your music production system and not, as is often the case, the other way around. We strongly believe that flexibility is the key and we are sure you will appreciate the variety of memory saving features on offer.

8.1 RAM Considerations

By default, the sampler will play back samples at full quality with the help of the TPC technology. The TPC algorithm is capable, on average, of a savings of up to 70% when compared to the same uncompressed 24 bit data.

The cost in term of CPU consumption for the compression/decompression is negligible, voice count being equal, so the net result of having TPC in place is that you will be able to load more samples in RAM, and ultimately get a lot more out of your host computer.

You can also force the sampler to operate in 16 bit mode for extra savings. Remember that, unlike TPC, 16 bit playback has an effect on quality. It is however important to stress that, whatever mode you choose to use in real-time, the rendering quality of the offline bounce, as mentioned in the previous chapter, will not be affected.

As you probably have realized by now, the numbers in the bottom right of the interface indicate how much memory is required by the combination of all the instruments present in the project. The TOTAL is the amount of memory required for your selection to sit in RAM.

It is important to understand that this figure does not include your sequencer's own memory requirements, nor does it reflect usage of other virtual instruments used in your song.

It is usual to consider that approximately 300Mb is necessary for a modern operating system and a typical virtual instrument host to operate comfortably underneath SUPERIOR. This is called the system headroom.

[Tips] The more you eat into that vital allocation, the more likely you are to starve your system and possibly hard crash your computer, placing a strain on all electronic components. Please preserve system headroom at all times as not doing so may cause irremediable loss of data and possibly physical damage to your computer.

As implied above, there is an obvious relationship between kit composition and memory requirement: the bigger the kit, the more samples will be necessary for playback.

The best advice we can give you to reduce memory requirements is therefore to assign only as many instruments as is necessary. X-Drums are obvious candidates for this type of optimization.

Reduce the number of instruments of a specific type if you find yourself only using a few of them. Ask yourself if you really need those 6 crash cymbals all at once: maybe you find yourself only using 3 of them after all and perhaps you only hit the third a single time in the course of a song.

If you are still unable to load the kit you desire in RAM there are multiple ways to work around the problem.

A very effective way to keep the sampler memory footprint to the minimum for any given pre-programmed sequence is the memory caching feature. In a nutshell, when engaged, only samples requested by the MIDI sequence will be read from disk and loaded in memory. Click the 'Cached' to start loading samples on demand.

There is a side effect that should be noted however: caching introduces a delay in playback the very first time a sound is requested. This will manifest itself as a temporary stuttering which will continue until samples are loaded in RAM. This inconvenience is a small price to pay however when RAM is at a premium.

[Tips] While in 'Cached' mode you can force load the kit into RAM by pressing 'Load'. Press 'Clear' before caching again to free up all memory of samples that were previously loaded.

Another way to reduce a kit requirement is to restrict the sample pool using the Voices and Layers section:

- select any number of instruments (see chapter 3 for details)
- decrease the number of samples for Soft, Gradient and Hard hits by clicking in the field and typing manually.

[Tips] Unloading articulations that do not apply to a particular situation can be performed using, the EDIT ARTICULATION ONLY switch mentioned numerous times already. Simply select the articulations you would like to remove from RAM, for example Snare Rolls, and type 0-0-0 in the Layer Limits fields.
Don't forget to save your prefered layer population configuration as a preset when done.

And it is now time to mention perhaps the feature with the most dramatic effect on RAM, the bleeding of instruments in the microphones.

You may have noticed that enabling or disabling bleed in the BLEED CONTROL section of a microphone channel (see Refined Microphone Controls earlier in this manual) affects the TOTAL RAM figure noted in the bottom left corner of the interface. This is because bleed correspond to actual samples required for playback.

As you can imagine, loading instruments bleed in all the microphones would demand a gigantic amount of RAM, quite possibly a lot more than you have available. It is therefore important to note that the opposite is true: a completely 'dry' kit will have a significantly lower footprint.

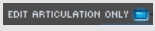
[Tips] Remember that the Offline Bounce process reviewed in the previous chapter makes use of all available samples and instrument bleeds, as well as the complete pool of samples attached to the different layers available for the instruments. It should therefore be noted that regardless of the optimization you may have to perform to keep your kit's RAM requirement in check, you can always access the full sonic quality of the product by rendering to audio.

8.2 CPU Considerations

As previously discussed, the microphone BLEED SECTION has a substantial impact on your system's resources - each time an instrument is 'heard' through an additional microphone, more samples are being utilized. Each 'voice' creates additional demands on your computer's memory and CPU, so additional bleed can negatively affect these resources, if left totally unmanaged.

To help relieve your system, especially if you intend to use numerous FX in the Mixer, SUPERIOR allow you to optimize the voice count for each and every instrument present in the Studio window. Again the 'Voices and Layers' section is where the optimization takes place. Simply select any instrument combination using the usual shortcuts and type the desired value in the 'Voice Limit' field: 

The number of voices for an instrument dictates how many concurrent samples of the same articulation are allowed to ring until automatic muting of the lowest in volume occurs. High values require more CPU.

[Tips] Note that the Voice Limit can be specified at articulation level using the 

switch.

9 SETTINGS AND PREFERENCES

9.1 Instrument Settings 

The Settings window contains the sampler preferences.

• *Mono All Channels* - outputs are treated as independent mono channels. This is useful for some hosts or for creative routing, giving you access to 32 individual channels. This configuration applies globally to all your projects so do not select if you are in the middle of a project, working to a tight deadline!

• *Bounce Splits Stereo* - bounces overheads and ambience files as split stereo as opposed to interleaved. Useful to avoid conversion on import with some hosts.

• *Keep Intermediate Bounce* - when bouncing through the Mixer you can opt to keep the raw files created in the process, as fed to the Mixer to produce the final result.

• *MIDI keys as numbers* - displays MIDI notes as numbers in the key input field of the Edit window. Useful if you are used to GM conventions or otherwise require a host independent notation.

• *Record-start at MIDI* - bounces from the first MIDI event in the song instead of bar 1 beat 1. Useful for some hosts that transmit MIDI song event inaccurately. Bounced files need to be imported at the first MIDI events.

• *Force Cache Mode* - instructs the sampler to start in Cache mode regardless of the saved state. Useful if you wish to check that your system is meeting the memory requirement of the kit recalled before loading a bank.

• *Default 16-bit* - makes 16 bit playback the default for all new projects. Useful if you wish that all your songs operate in this mode. Previously saved files are unaffected and will load with their own defaults.

• *No Visual Hits* - disables the drum animations. This can be turned off for convenience if you prefer a static interface. Visual hits also impacts slightly performances so you should turn this OFF if you experience issues.

• *No Meters* - disables the Mixer VU Meters. This can be turned off for convenience if you prefer a static interface. Meters updates also impact system performances so you should turn this OFF if you experience issues.

• *EZ Mixer follows selection* - You can force the EZ Mixer to be contextual to your selection in the Studio View. When this option is ON, selecting a different drum will automatically switch the active microphone in the EZ Mixer.

• *CC7 controls Master Vol* - Specifies whether CC7 MIDI messages have an effect on the Master Volume.

• *Memory Usage Limit* - The memory limit is there to ensure your computer does not crash as a result of loading too many samples into RAM. The exact value that is, in effect, the critical mass for your system and is dependent on your setup. This may vary from project to project. 1200 Mb, the default value, should be appropriate for most users but a different value may suit your situation more adequately.

9.2 Status Box

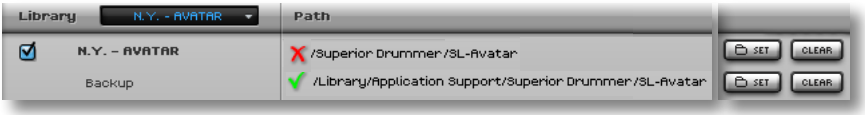
SUPERIOR's status box is a useful tool to troubleshoot various issues that usually affects the triggering of samples and may have undesirable side effects.

• *Not Loaded* - will light if a MIDI request is understood but cannot be honored. This usually means that the MIDI note received is part of the keymap but that no instrument is loaded in the appropriate Superpad.

• *Unmatched Key* - will light up if a MIDI event has no equivalent in the current key configuration. You should assign the incoming MIDI note to the subpad of your choice or modify the MIDI sequence.

9.3 Sound Paths

Sound Libraries can be managed from the Settings tab by specifying custom paths to the sounds, as well as setting up 'Backup' paths that can be used when using SUPERIOR on-the-go. For instance, the screenshot below shows a primary path used in the studio (full install) and a backup path with minimum install, that is presently in use as our example user is away on the road touring:



To set the path to the sounds, start by choosing the library you would like to set from the 'Library' pull down menu then simply click the 'set' button to the right and navigate to the library's root (usually the folder named after the library, please refer to the manual that came with your product for further information). You can also clear paths that are no longer in use.

To add a sound library you just acquired to expand your sonic arsenal, click ADD PATH TO LIBRARY and navigate to the root folder for the library. The sound library will thereafter be available from the main selection menu in the top section of the interface. You can remove sample sets using the 'remove' button.

Once all your sound libraries are in place and registered with the SUPERIOR instrument so they can be accessed from the Construction window, you may designate which kit should be loaded on startup. Just select the appropriate kit at the top of the interface then, in the Settings window, click MAKE CURRENT LIB DEFAULT.

Finally, should you wish to do so, you can specify where your presets are stored. Press SET PATH TO PRESETS and navigate to the desired directory. This can be any folder with read/write access including shared folders and network drives so you may, for example, share presets between several workstations as far as you specify the same path on both.

It is worth noting that you may also locate sound libraries themselves on network volumes but depending on your exact setup this may result in slow loading time.

APPENDIX

Troobleshooting common issues

The below are the most common issues preventing normal or full operation of SUPERIOR Drummer. Please review and follow the advice available below. Should the instructions be insufficient or unrelated to your particular problem, please visit http://www.toontrack.com/support/ for our comprehensive FAQ.

• *Authorization Code rejection:* to resolve any situation where you are unable to authorize SUPERIOR Drummer, we recommend you download Toontrack solo and try to authorize from within this application instead of your host. It is available for download from your Toontrack user area or the following URL: http://www.toontrack.com/toontrack_solo.asp

You should also ensure that you have downloaded and installed the latest version of SUPERIOR Drummer.

If you are still unable to resolve the problem, please review all the FAQ entries under the Authorization section for your products, one of them is likely to help you get past this initial hurdle. If after reviewing them, you are still no further, please use the 'Contact Support' form available from the Support Portal (FAQ) to contact our support team. Please provide as much detail about your situation and system configuration as possible.

• *No sound can be loaded:* if you experience issues loading the core library or any new expansion pack you have purchased and installed, please verify that the Settings page references the 'N.Y-Avatar' library (or any other expansion pack recently installed) and that the path is valid.

If this is not the case, please use the 'Add Path to Library' button to link the library manually. Please refer to section 9.3 of this documentation for additional details.

Note that you should also ensure that the path is pointing to a full installation, as some instruments may be unavailable if you originally chose a partial installation.

• *Drag and drop of MIDI packs cannot be performed:* drag and drop issues are very often host or operating system related. For all situations where installing MIDI packs to the SUPERIOR Groove Browser is impossible, we recommend you download Toontrack solo, and try to install as per instructions using this application instead of your host.

As noted in chapter 1, the MIDI library may need to be downloaded from your user area, located at http://www.toontrack.com/userarea.asp

Please review the Toontrack FAQ for all other 'Getting Started' types of issues or unexpected behaviours in operation. Again, ensuring that you have the latest product update is usually the best first step you can take and will in all but the most complex cases resolve the matter stopping you from making music!

Default Key Layout

GM EXTENDED CORE MAPPING

Cymbals	Ride Edge	59	B2
	Crash B Mute	58	A#2
	Crash B	57	A2
		56	G#2
		55	G2
	Crash A Mute	54	F#2
	Ride Bell	53	F2
		52	E2
	Ride Bow	51	D#2
		50	D2
	Crash A	49	C#2
Toms	Racktom 1	48	C2
	Racktom 2	47	B1
		46	A#1
	Racktom 3	45	A1
		44	G#1
	Floortom 1	43	G1
		42	F#1
	Floortom 2	41	F1
Snare	Rimshot	40	E1
	Ruffs	39	D#1
	Head	38	D1
	Sidestick	37	C#1
Kick	Right	36	C1

Hats	Open 1	26	D0
	Open 2	25	C#0
	Open 3	24	C0
	Foot Splash	23	B-1
	Closed	22	A#-1
	Pedal	21	A-1

X–DRUMS GENERIC MAPPING

X-Snare	Sidestick	127	G6
	Rimshot	126	F#6
	Head	125	F6
X-Hats	Open	124	E6
	1/2 Open	123	D#6
	Closed	122	D6

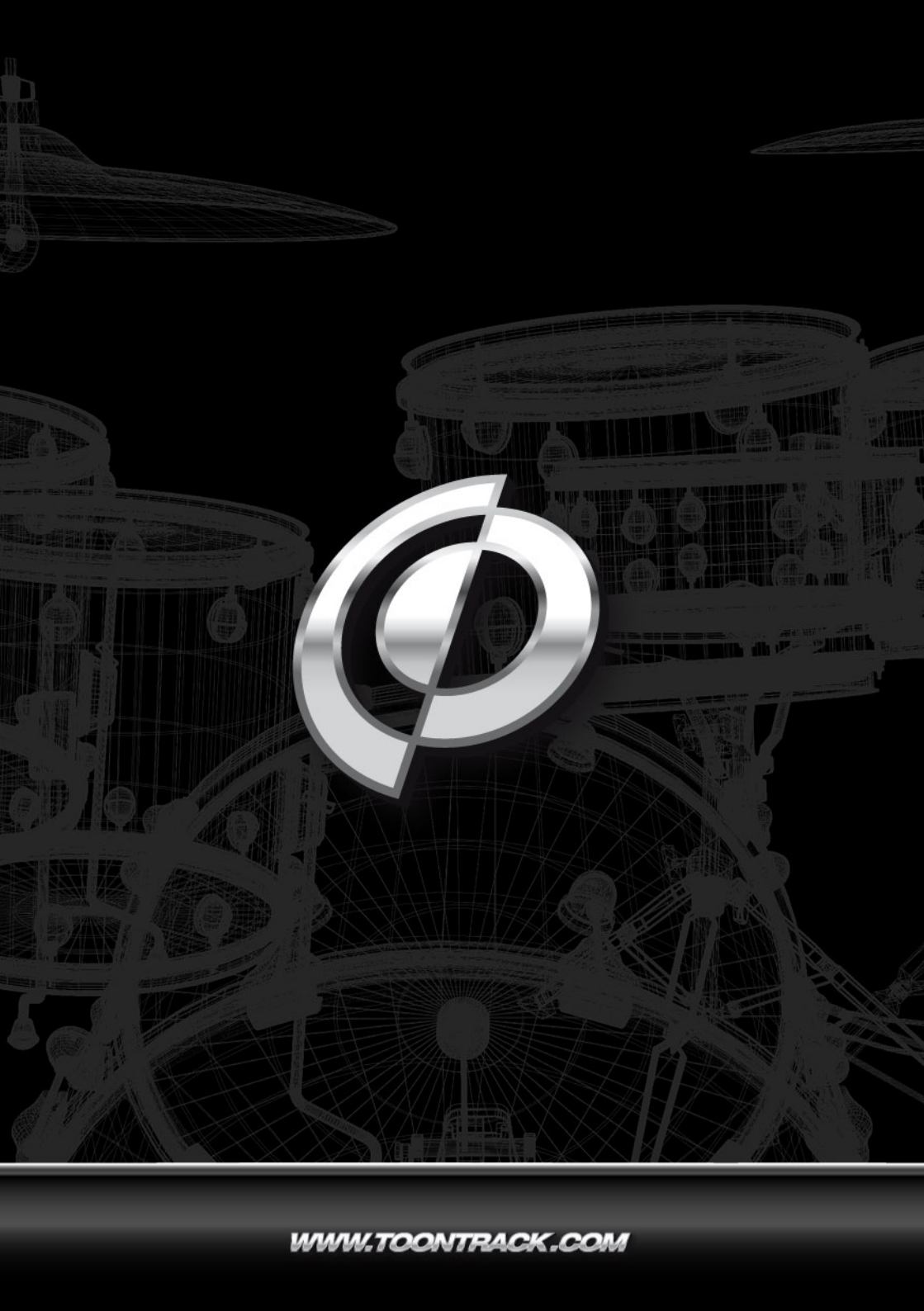
X-Ride	Edge	118	A#5
	Bell	117	A5
	Bow	116	G#5

X-Crash	Crash	56	G#4

X-Tom	Rack/Floor	50	D4

X-Kick	Right	35	B3

Please refer to specific key layout included with your Toontrack product for full mapping.



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