MUSICLAB

REALGMS 1

USER'S MANUAL

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ABOUT THE PROGRAM

RealGMS is a virtual guitar instrument modeled after the exceptional Godin Multiac Spectrum SA. A rare gem in the guitar world, this electro-acoustic steel string has been featured in the hands of legendary musicians.

RealGMS captures all the beauty of the Spectrum sound. It delivers diverse sonic textures thanks to unique body design, providing focused sound, crisp transients that are perfect for mixing and mastering. With two widely separated pickups of different types, RealGMS offers a wide array of tonal options. The natural phase interaction between these pickups adds gives the sound a lively and organic feel.

By blending in the additional sounds of a 12-string guitar recorded through the Roland SY-1000, RealGMS adds even more depth and richness to your tone, creating a lush, full-bodied sound ideal for both rhythm and lead playing. With our new advanced strum sampling technique, RealGMS offers unprecedented

authenticity and an extended dynamic range, bringing your strumming to life like never before.

The true power of RealGMS lies in brand new technologies incorporated in this innovative guitar performance tool:

- Multi-channel layering technology, incorporating a custom library of specially recorded samples taken from every fret of all strings of a real guitar.
- Floating Fret Position technology, which imitates change of fret position of a guitarist's hand on the neck. This gives you the possibility of playing on up to 132 guitar frets using just 50 keys of a standard keyboard.
- Our original Guitar Touch technology letting you easily imitate basic guitar techniques (strumming, plucking, sliding, bending, muting, etc..), using standard MIDI keyboard and MIDI controllers, such as Pitch Bender, Modulation Wheel, Sustain Pedal, Aftertouch.
- Guitar Rhythm Pattern technology providing huge MusicLab Guitar Pattern Library for easily creating guitar accompaniment tracks. All you have to do is to find the appropriate rhythm pattern(s), copy it to the needed number of measures, start your sequencer and use MIDI keyboard to play chord changes, or alternatively add chords to a MIDI track via sequencer's editor.
- Song Mode turning RealGMS into a powerful and easy-to-use song writing tool allowing you in no time create perfect guitar backing tracks for your songs. Simply insert chord symbols and rhythm patterns into the built-in Song Track - and your guitar part is ready!
- Advanced Humanize section allowing to easily add realism to the performance, both live and step-recorded in a MIDI track, or automatic.

These technologies allow to closely emulate live guitar sound and techniques, letting you perform guitar parts with a whole new level of realistic expression.

INSTALLING REALGMS

INSTALLING REALGMS PC VERSION

Double-click RealGMS Installer file and follow the on-screen instructions.

In case your VST/VST3 plugins folder is not registered correctly RealGMS installer will not automatically install RealGMS DLLs in the correct folder. Therefore, to let your VST host 'find' RealGMS you have to manually copy **RealGMS.dll**, and **RealGMS.vst3** files from RealGMS installation folder to your VstPlugins/VST3 directory.

RealGMS default installation folder **C:\Program Files\MusicLab\RealGMS 1**

INSTALLING REALGMS MAC VERSION

Double-click RealGMS Installer icon and follow the on-screen instructions.

LAUNCHING REALGMS

Launching RealGMS as a VST/AU instrument:

1. Open your DAW (host application).
2. Create Software Instrument track.
3. Add RealGMS to the track.
4. Open the RealGMS window by double-clicking the RealGMS button/icon.

Launching RealGMS as a standalone version:

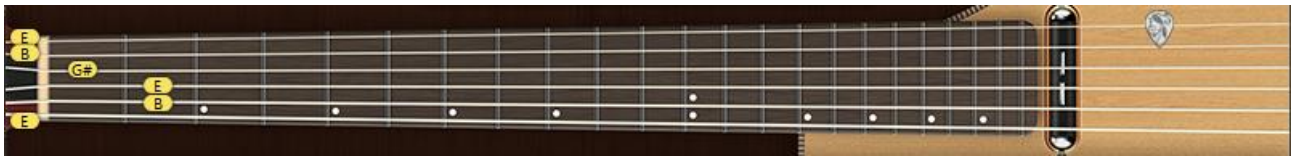
(PC) In Start Menu go to **Programs/MusicLab/RealGMS 1** folder and click on the RealGMS icon.

(Mac) Run **HD/Applications/RealGMS**.

VIRTUAL FRETBOARD

In RealGMS we have realized the **Floating Fret Position** principle, which imitates change of fret position of a guitarist's hand on the neck. This gives a unique possibility of playing on up to 132 guitar frets using just 50 keys of a standard keyboard. This, along with the fact that we have sampled 22 frets of each string, allows you to emulate a guitar performance with maximum sonic accuracy.

In the center of the RealGMS window is the virtual **Fretboard**, one of the important elements of the plug-in, which allows you to visualize and control the Floating Fret Position while playing the guitar part.



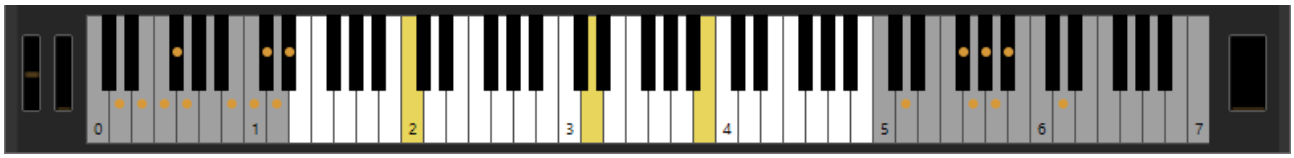
The Fretboard has a number of functions:

1. **Preview** - allows audio previewing the loaded guitar patch by simply clicking on strings.
2. **Display notes** - shows the performed notes (with names) in accordance with visual representation on the fretboard and real sound (you see the notes displayed on string and fret of exactly the same sound samples currently playing).

3. **Fret Position Auto** control (the **Auto** button is pressed) - realizes automatic fret position change in Solo mode, which moves the 'Capo' strip along the Fretboard depending on the sequence of performed notes.
4. **Fret Position Manual** control (the **Auto** button is released) - allows manually changing fret position by right clicking on any fret. A 'Capo' strip will appear on the fretboard, which will prevent playing samples from any fret lower on the neck than the 'Capo' position (except for the 6th string).

VIRTUAL KEYBOARD

In the lower part of RealGMS window you see a virtual keyboard that visualizes RealGMS keyboard layout (Main and Repeat zones), indicates activated Key Switches in Solo mode, and shows all MIDI notes incoming to RealGMS or played on virtual fretboard with a mouse:



Additionally, virtual keyboard duplicates the external MIDI keyboard input, so everything you can play by MIDI can be produced on virtual keyboard with a mouse. Shift-clicking will hold down the pressed key allowing to preview chords/Key Switch FXs.

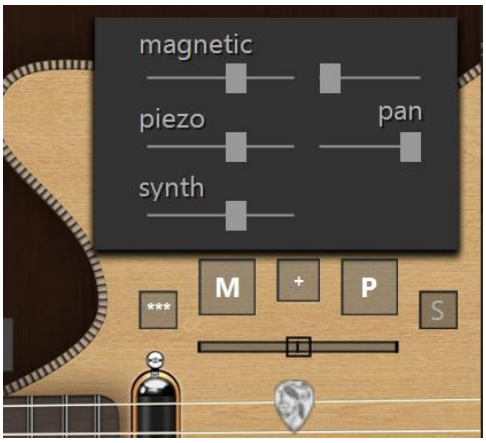
Hold Pedal button at the right visualizes Hold Pedal controller (CC#64) MIDI activity, as well as serves as toggle for switching Hold Pedal on/off Hold Pedal.

Pitch Wheel and Modulation Wheel indicators at the left visualize Pitch Bender and Modulation controllers MIDI activity

PICKUP SELECTIONS

RealGMS samples were recorded directly from each of two pickups of Multiac Spectrum SA. Additional sounds of a 12-string guitar recorded through the Roland SY-1000. It provides you number tonal selections by simply switching between individual pickups and their combination, controlling balance, volume and pan: Piezo (P), Magnetic (M), and Synth (S).

To switch pickups on and off simply click the appropriate pickup button. Use "..." button do access additional settings.



Use "+" button to switch both Magnetic and Piezo. Selecting Both activates slider below letting you control volume balance between pickups.

Also, you can assign Pickup FX on MIDI CC#19 or any key/note you want in Key Switches panel, and use it for selecting the needed pickup combination from MIDI keyboard or MIDI track.

MANAGING SOUND BANK

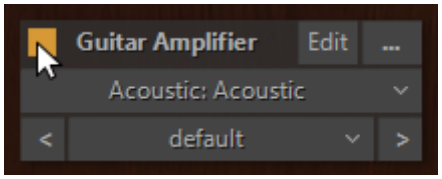
Note, that the installer will create 44.1 kHz sample rate sound banks. In case your audio settings have other than 44.1 kHz sample rate, RealGMS on launching will ask if you want to optimize the sound bank to match your audio settings.

Selecting 'Create Optimized Bank' button will bring up RealGMS Bank Manager, which will automatically create the needed sample rate sound bank.

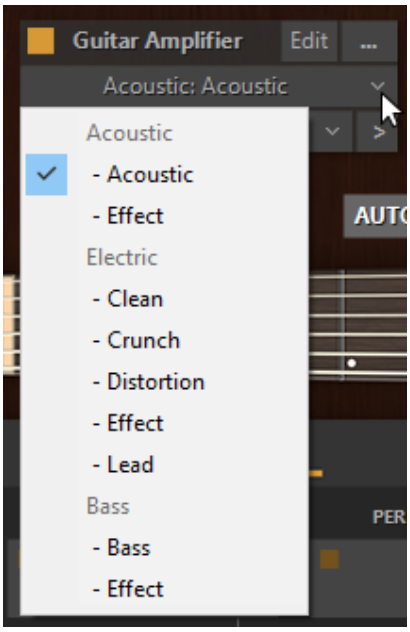
USING GUITAR AMPLIFIER

Our instruments host most popular guitar amp sim plug-ins inside. You can use our own guitar tone presets, create your own ones and recall them in one click without the necessity of leaving the instrument window.

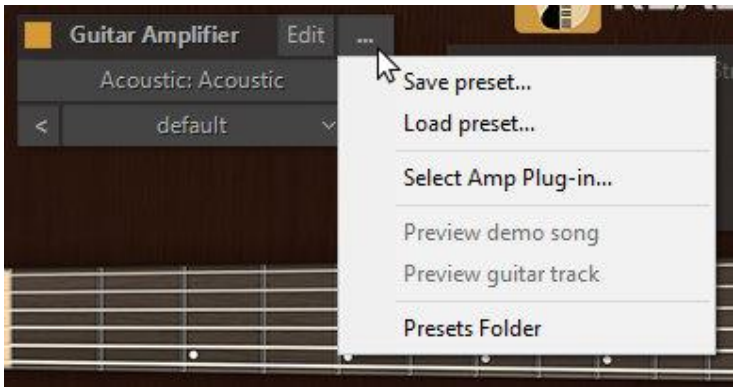
We have created over 200 guitar tone presets for open source Guitarix plug-in so that you don't have to purchase an additional guitar sim plug-in in case you don't have one already.



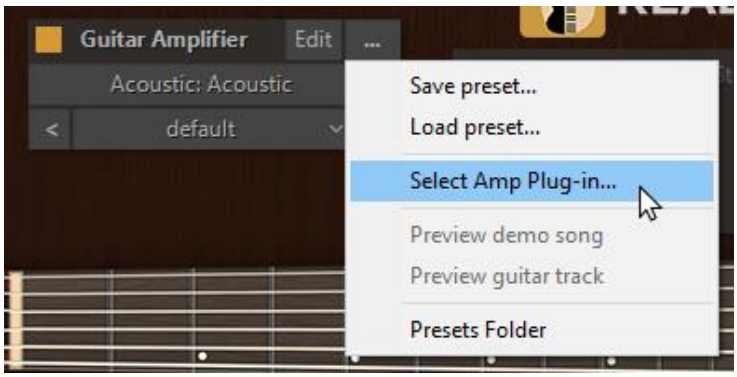
When you open RealGMS, Guitar Amplifier is ON by default. You can turn it OFF by clicking on square button.



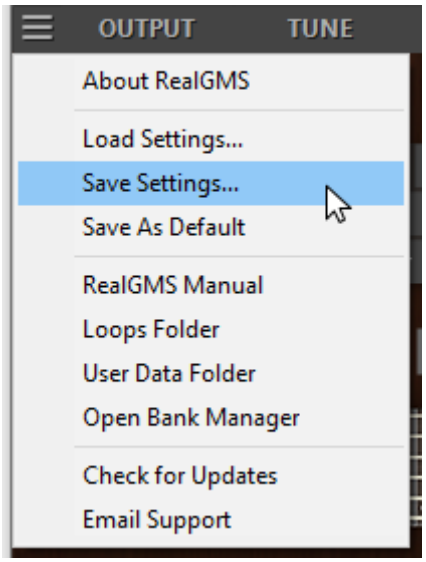
You can choose presets from three categories: Acoustic, Electric and Bass. Acoustic category offers two subcategories: Acoustic and Effect. Electric category offers five subcategories: Clean, Crunch, Distortion, Effect and Lead. Bass category offers two subcategories: Bass and Effect.



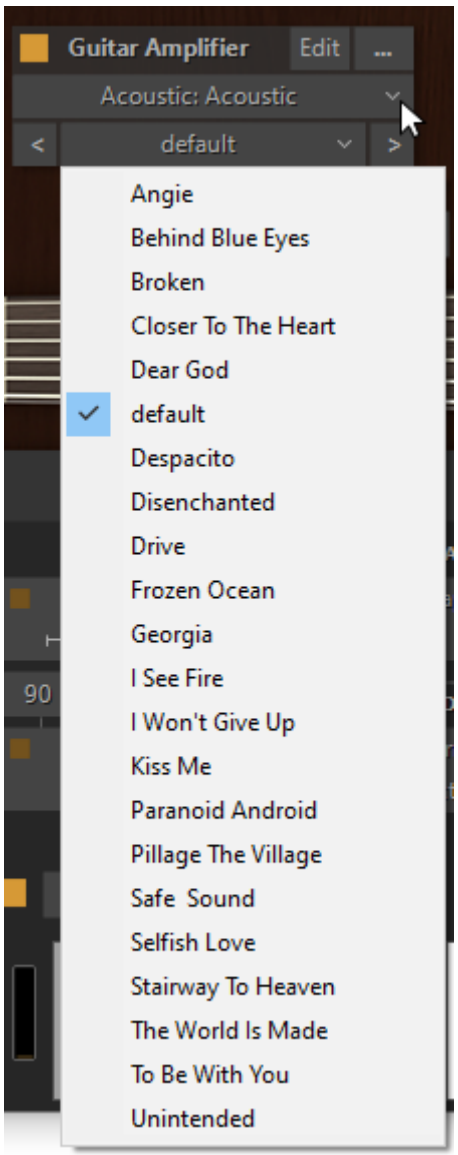
You can save and load guitar amplifier presets by clicking on "..." button.



By clicking “Select Guitar Amplifier” button you can select your preferred Guitar Amplifier.



Please note, when you save/load Guitar Settings file guitar amplifier preset information saves/loads as well.



Select presets by clicking on “<>” buttons.

Click Edit button to finetune your Guitar Amplifier. You can add different blocks by clicking on “+” button. “–“ button deletes block.

PERFORMANCE MODES

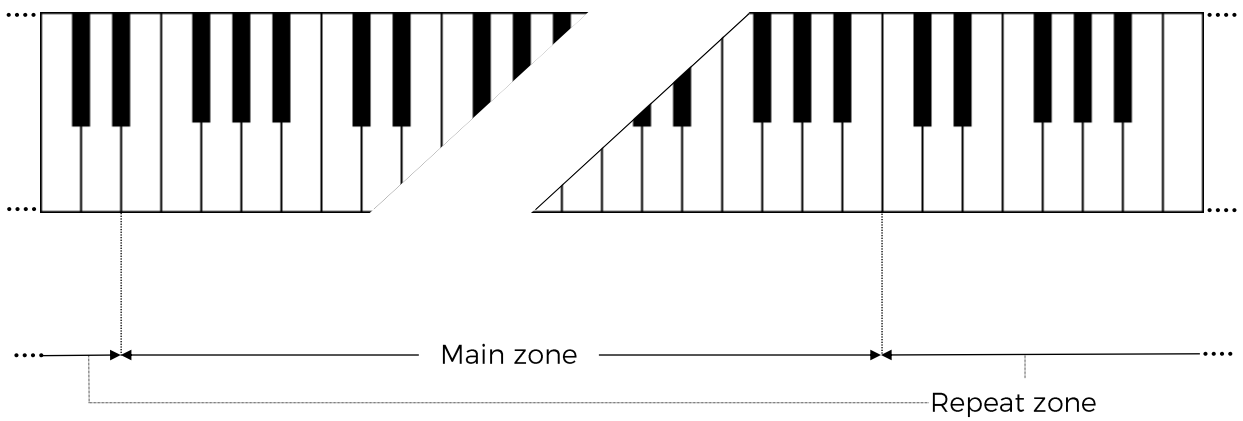
RealGMS features SOLO and MULTI guitar performance modes, each of which is a separate performance tool meant for imitating special guitar performance style:

1. **Solo** - polyphonic mode for performing melodic parts.
2. **Multi** - a universal mode allowing you to perform various guitar accompaniment techniques that use chords, such as Strumming, Bass and Strum, Bass and String picking, and much more.

The performance modes are selected by clicking the respective tab:

USER KEYBOARD LAYOUT

When connected to RealGMS MIDI input the external keyboard is divided into 3 zones: **Main zone** (E1 - B4), left (C0 - D#1) and right (C5 – C7) **Repeat zones**.



In Solo mode **Main zone** extends to C1-B4.

Main zone serves for playing melodic parts (Solo mode) and entering chords (Multi mode).

Any key of the Repeat zone repeats notes and chords played in the Main zone.

This way of keyboard mapping allows you to play guitar parts with 2 hands - you play various notes or chords in the Main zone with one hand and repeat them by pressing the pre-mapped keys in Repeat zone with the other hand without changing its position. This is very important for carefully preserving rhythm pattern accuracy and groove feel.

Using such a performance technique you can easily imitate the most characteristic details of guitar performance, such as tremolo, strumming, bass and strum, picking on your keyboard making them sound naturally as if they are played on a real guitar.

Repeat Key zone functions:

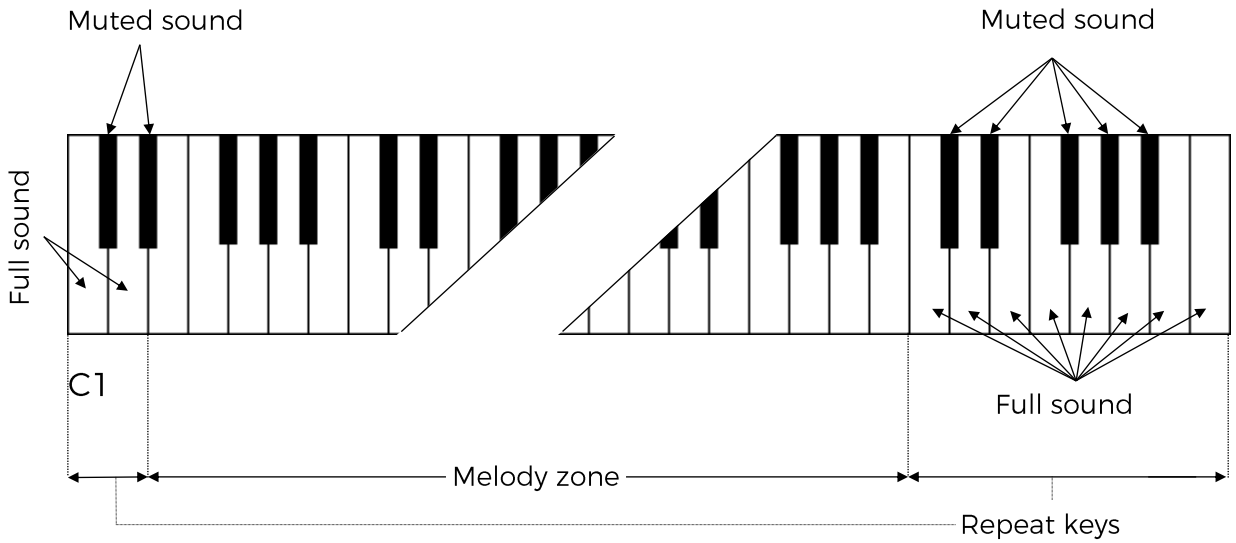
- In Solo and Multi modes you can repeat notes and chords played in the Main zone (any white key repeats the full sound, while black key repeats the muted sound). Also with the keys of Repeat zone you can alternate up/down/muted strokes to produce strumming and tremolo techniques (C, E, G – trigger up stroke; D, F, A - down stroke; C#, F#, A# - muted up stroke; D#, G# - muted down stroke) with both single notes and intervals/chords.
- In Multi mode/Bass setup you can trigger Bass I (Root) and Bass II (alternative bass) notes as well as upper string strums.
- In Multi mode/Strings setup Repeat keys trigger individual voices (strings) of a chord taken in the Main zone.
- In Solo and Multi modes Repeat keys, when activated in Key Switch panel, can also be used as Key Switches to switch on various FXs.

SOLO MODE

Click Solo tab to switch on the Solo performance mode.

Solo mode window

In this mode the Main zone (E1 – B4) of the keyboard works as a normal polyphonic keyboard, while both Repeat Key zones (left (C0 - D#1) and right (C5 – C7)) allow you to repeat notes taken on the Main zone (white keys repeat full



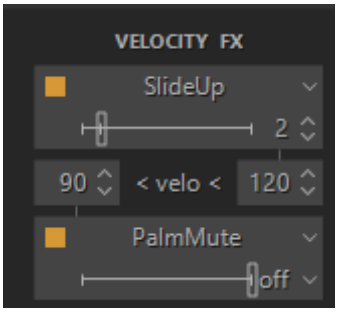
sound; black keys repeat muted sound of the same notes).

CONTROLS

RealGMS Solo mode provides you with multiple permanent and switchable controls allowing you to easily add various specific guitar articulations and effects to your performance.

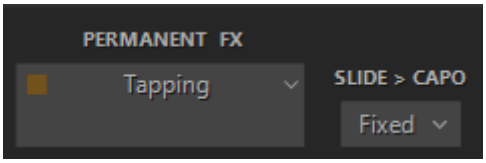
VELOCITY SWITCH EFFECTS

On the left lower part of Solo window you see **Velocity Switch FX** section including two FX boxes:



Using the Velocity Switch FX controls, two FXs can be dynamically engaged depending on the velocity of the MIDI notes played. For low velocity notes, set the numeric box on the left side to the threshold at which notes played at a lower velocity will trigger the FX selected in the lower FX selector. For high velocity notes, set the numeric box on the right side to the threshold at which notes played at a higher velocity will trigger the FX selected in the upper FX selector. As notes are played below or above the two thresholds, the two FX selector boxes will change to a light grey color to indicate they are being engaged. As with all FX selectors, each of the two Velocity Switch FX selector boxes have a FX Enable LED button so you can enable one, both or neither.

PERMANENT EFFECTS



Permanent FX Box - allows selection of Effect in the pull-down menu and activate it by clicking on **FX Enable** LED button in the upper left corner.

Slide > Capo - controls the movement of the capo along the fretboard while performing either a Slide or Hammer-On effect. You can select any of 3 modes in a Slide>Capo combo box:

- **Fixed** - Capo is not affected. All notes will be played to the right of Capo position moving from string to string (except for the notes on the 6th string which the capo does not affect).

- **Ignore** - Capo is not affected. Slides ignore Capo position; notes will be performed along the string moving to another string only in case of reaching first or last fret.
- **Move** - Capo moves with Slide or H.O. (Hammer-on) notes along the fretboard.

Legato - enables producing notes played legato within semi-tone or whole-tone from each other without triggering attacks and being in mono mode (next will mute previous). The effect is as if the notes were played on the same guitar string when only the first note is picked and the following notes are played by the left hand alone.

H.O. - enables Hammer-On Effect with automatic Pull-Off on key release, affected note range is specified (in semi-tones) in numeric box.

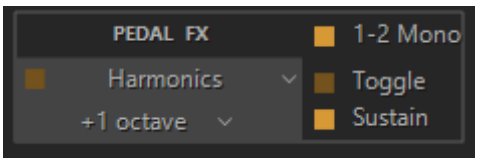
Bass Zone - splits the Main Zone of keyboard into two parts to allow individual performance techniques for each part. The Bass Zone button is toggled on and off. There are two additional combo boxes to set the lower note (E1, D1 or C1) and the upper note (ranging from E1 to E4) of the zone. Bass zone notes have a stronger velocity curve and are NOT affected by:

- **Mute keys** - this allows performing mutes and repetitions on the notes played outside Bass zone without cutting bass notes.
- **Velocity Switch FX** - this allows applying velocity switches only to notes played outside Bass zone while playing bass notes without the velocity switch.

Left combo box works independently of Bass zone button and allows **Drop D** and **Drop C** tuning in Solo mode by selecting the D1 or C1 as the lower note for the 6th string.

PEDAL SWITCH EFFECTS

You can trigger various RealGMS Effects selected in **Pedal Switch FX** box by pressing normal Sustain Pedal controller.



Pedal Switch FX box has five different controls:

- **1-2 Mono** LED (On/Off)
- **FX Enable** LED (On/Off)
- **FX Selection** pull-down menu
- **Toggle** LED (On/Off)
- **Sustain** LED (On/Off)

1-2 Mono:

On - sustains all notes except for the notes played at a semi-tone or whole-tone interval (step-wise melodic run): the next note 1-2 steps apart mutes the previous one as if played on the same guitar string, while the thirds and larger intervals are being sustained.

Off - pedal sustains all notes played non-legato, and legato (in the case Hammer-On and Legato FXs are off).

FX Enable LED indicates if the Pedal FX is enabled or not. When LED is On, the FX is enabled when the Sustain Pedal is pressed.

FX Selection pull-down menu selects which FX is controlled by the Sustain Pedal.

Toggle:

On - indicates that the FX is toggled on and off each time the Sustain Pedal is pressed.

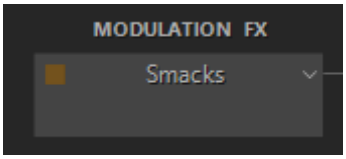
Off - indicates that the FX is only enabled when the Sustain Pedal is kept pressed. When the Sustain Pedal is not pressed, the FX is not enabled.

Sustain:

On - indicates that the Sustain Pedal both turns on the FX as well as sustains notes.

Off - indicates that the Sustain Pedal controls only the FX, and no notes are sustained.

MODULATION SWITCH EFFECTS



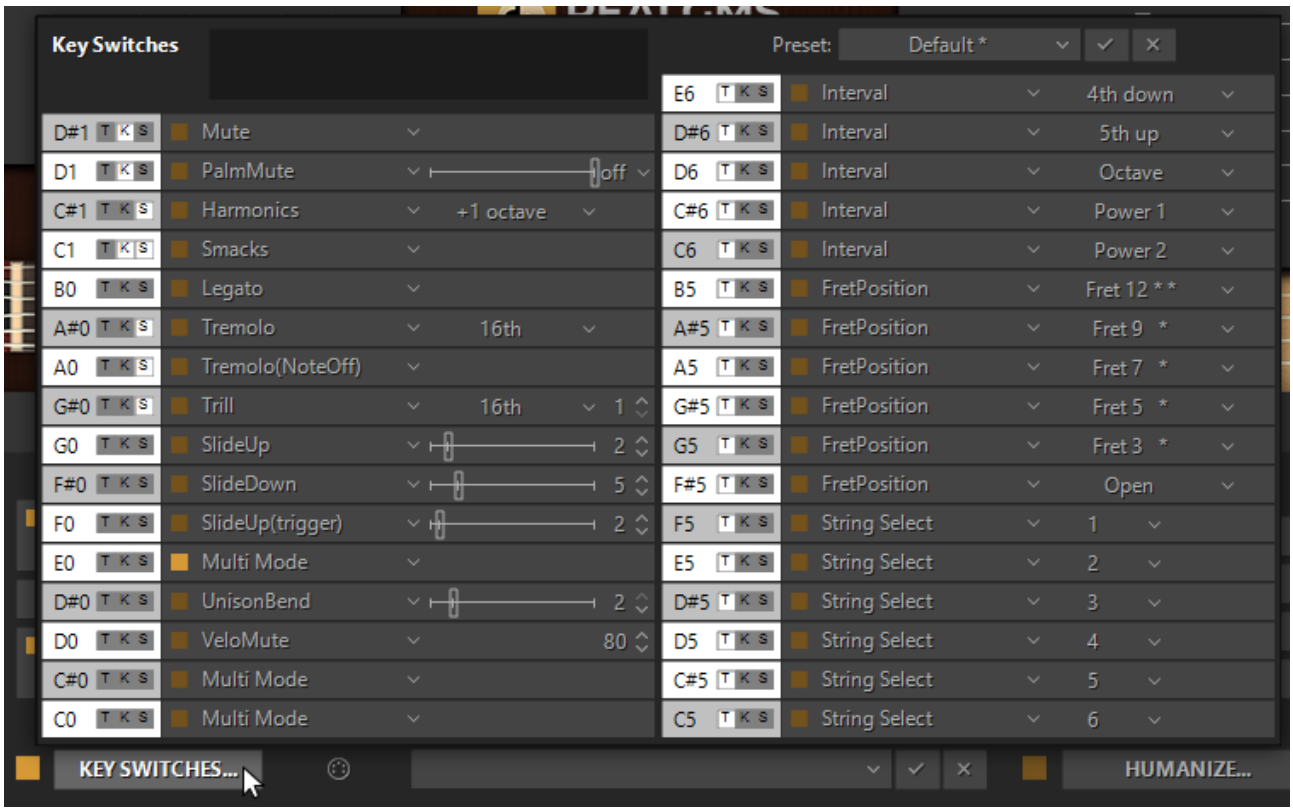
You can switch on various RealGMS Effects selected in **Modulation Switch FX** box by simply moving normal Modulation Wheel of your MIDI keyboard. Releasing Modulation Wheel to '0' position turns the Effect off.

Note, when Modulation FX box is activated effect assigned in M.W. box at the right will not work.

KEY SWITCH EFFECTS

RealGMS numerous guitar Effects can be triggered in Solo mode using the advanced Key Switch system allowing to assign various FXs on Repeat Zone keys as well as easily create and use custom presets in RealGMS **Key Switch panel**.

To open Key Switch panel click on Key Switches button on the left lower part of Solo mode window:



Key Switch panel

You see two columns of FX boxes corresponding to Left and Right Repeat Zone keys (C0-D#1 for the Left zone, C5-E6 for the Right zone).

Select Effect for a key in pull-down menu and click **FX Enable LED** button in the left part of FX box to activate it. Now pressing the correspondent key of Repeat zone will turn on selected FX, and change the box color to a light grey to indicate that FX is turned on.

Note, that activating **FX Enable LED** of any key switch will also be displayed on the RealGMS virtual keyboard. Moreover, triggering FX will also change color of a virtual keyboard key to a light red, giving you full visual control.

Three small buttons (clickable on/off) at the left of each FX box allow additional control of the Key Switch and FX:

'T' button ('toggle'):

On - indicates that the FX is toggled on and off each time the key switch is pressed (releasing the key is ignored).

Off - indicates that the FX is only enabled while the key is kept pressed (releasing the key turns the FX off).

'K' button ('key through') - when activated allows to switch FX and let the key switch simultaneously function as normal Repeat key (white for Full sound, black for Muted sound).

'S' button ('sustain') adds sustain function to FX, similar using the Sustain Pedal.

Note, Right Key Switches (Right Repeat zone) are 'toggles' by default, while Left Key Switches (Left Repeat zone) are not.

You can save all settings made in Key Switch panel as user presets for future use.

To create a preset, click on Preset combo box to activate Edit mode, type in the preset name, and press Enter on computer keyboard. Preset will be saved within RealGMS and added to Preset list.

To delete preset simply click on Delete icon at the right.

MIDI CONTROLLER PANE

You can assign various guitar effects to standard MIDI controllers:

- **P.B. Up** (Pitch Bender, upper combo box) - Off, Slide, Pitch, VeloAdd, MonoBend.
- **P.B. Down** (Pitch Bender, lower combo box) - 'same as Up', Off, Slide, Pitch, VeloAdd, MonoBend.
- **M.W.** (Modulation Wheel) – Off, Slide, Pitch, Modulation, MonoBend.
- **A.T.** (After Touch) – Off, Pitch, Modulation.

In the combo box to the right adjust the maximum range of pitch shifting/sliding (in semi-tones). Modulation envelope is adjusted in Tune panel (Left Menu bar in the upper left corner of RealGMS window).

HOLD BUTTON IN SOLO MODE

In Solo mode the Hold button works differently from Multi mode. In Solo mode when Hold button is on, any pressed and held key can be used for sustaining the following notes.

MULTI MODE

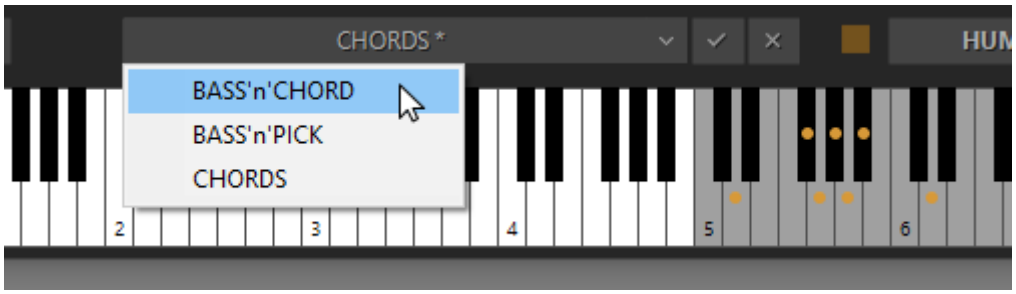
Multi mode is a universal mode allowing you to easily assign various guitar techniques you want to produce on the keys of Main and Repeat keyboard zones, such as strumming, muting, and individual string picking. You can also create custom performance modes by combining different techniques in a single set and adding many specific guitar effects, articulations, and additional sounds to the performance.

Click Multi tab to open Multi mode window.

PERFORMANCE PRESETS

On the lower central part of Multi mode window you see the Preset combo box

The most popular guitar accompaniment techniques that use chords are Strumming, Bass and Strum, and Picking ones. You can find the appropriate presets in Multi mode Preset combo box.



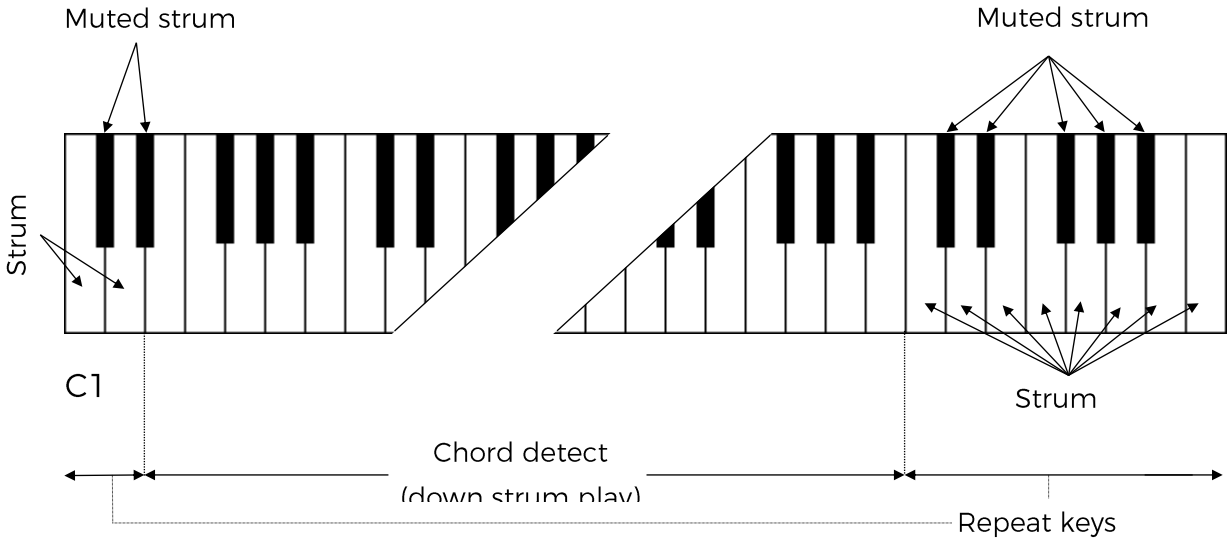
Preset combo box also allows you to save all settings made in Multi mode window and create your custom performance presets for future use.

Simply click the combo box, type in the name, and press Save button.

CHORDS PRESET

In this mode RealGMS detects the chord played in the Main zone of the keyboard (the root note and the name of the chord appear on the black info screen), builds a guitar version of the chord considering the selected Chord position and current position of a 'Capo' strip on the Fretboard, and finally plays it using a down strum technique.

Any key of Repeat zone repeats the whole chord played in the Main zone: black keys play muted strums, while white keys play strums when the chord is still held and muted strums when the keys in the Main zone are released. Up and down strums are triggered by neighboring keys for both white and black keys of the Repeat zones, like C1 - up strum, D1 - down strum, C6 – down strum, B5 - up strum and so on.

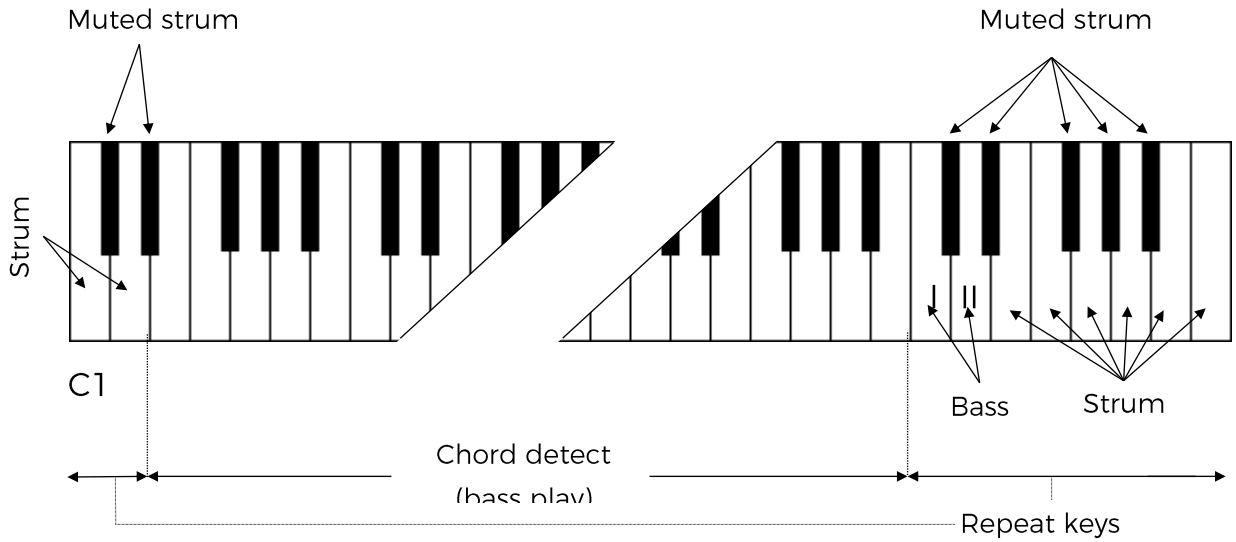


BASS & CHORD PRESET

In this mode RealGMS detects the chord taken in the Main zone of the keyboard, builds its guitar version and plays its Root note (Bass I) only. The Repeat zone keys now have the following functions:

- C5 triggers Bass I (Root note).
- D5 triggers Bass II (Alternative bass, usually the 5th degree of the chord).

The rest of the keys in both right and left Repeat zones trigger up and down strums of the upper strings of the chord, black keys perform muted strums of the



same strings).

BASS & PICK PRESET

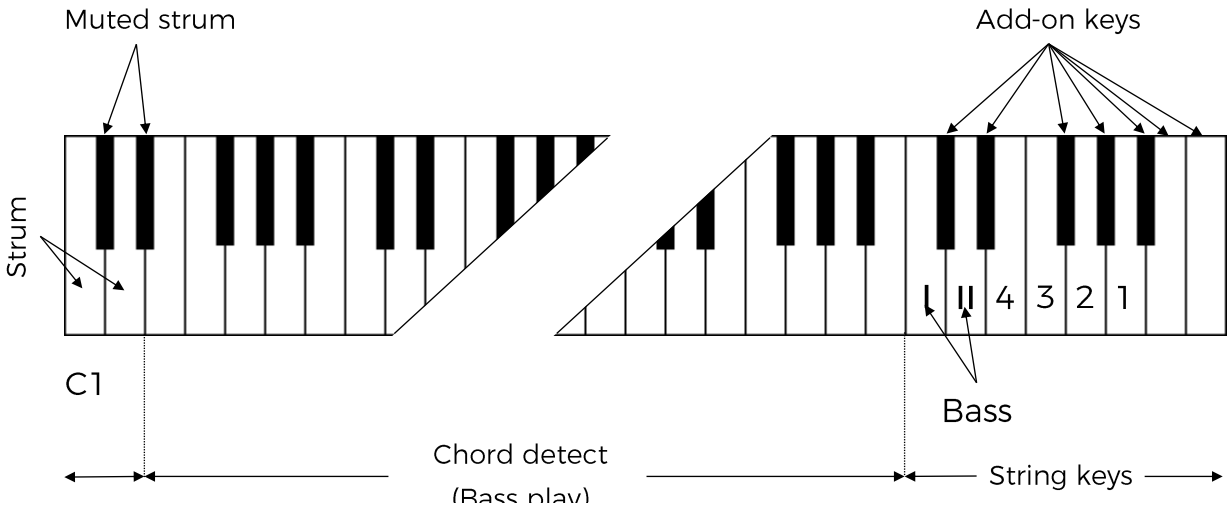
In this mode RealGMS identifies the chord taken in the Main zone, builds its guitar version and plays only its Root note (Bass I).

The Repeat zone keys trigger each voice of the chord separately, just as if you'd play it string-by-string on real guitar in the following way:

- C5 triggers Bass I (Root note)
- D5 triggers Bass II (alternative bass)
- E5 triggers 4th string
- F5 triggers 3rd string
- G5 triggers 2nd string
- A5 triggers 1st string

The other keys function as chosen in the **Black** combo box.

The keys of the left Repeat zone strum 4 upper voices of the chord (black keys perform muted strums).

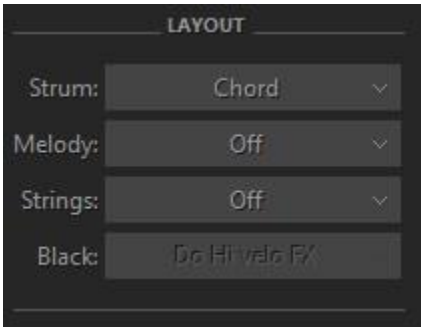


LAYOUT SECTION

Upper part of Multi mode window presents four parameter sections: Velocity FX, Layout, Chord, and Controllers.

Most important is Layout section, including main performance setups and controls. Layout section includes four combo boxes titled **Strum**, **Melody**, **Strings**, and **Black**.

Note, selecting an item in any section will give you access to its additional options at the right.



STRUM

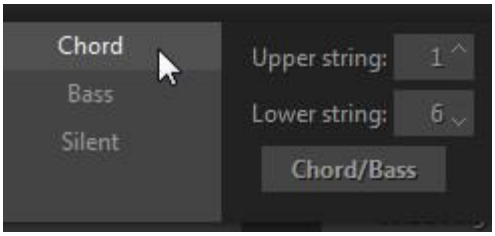
Strum combo box features Chord, Bass, and Silent selections.

CHORD

With Chord setup, RealGMS detects the chord played in the Main zone of the keyboard (the root note and the name of the chord appear on the black info

screen), builds a guitar version of the chord, and plays it using a down strum technique.

Chord options:



- Upper/Lower String - allow disabling upper and/or lower strings in played chords.
- Chord/Bass - switches on the X/Y chord detect mode letting you construct major/minor triad chords with any desirable note in the Bass.

BASS

With Bass setup, RealGMS detects the chord taken in the Main zone of the keyboard, builds its guitar version, and plays its Root note (Bass I) only.

Bass options:

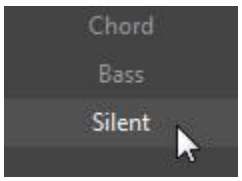
- Top Strum Voices - specifies number of strings in chords triggered by Repeat zone keys.
- Chord/Bass - switches on X/Y chord detect mode letting you construct major/minor triad chords with any desirable note in the Bass.
- Bass Mono - mutes Bass I note when next Bass II is played.
- Alter Bass - automatically alternates between Bass I and Bass II when same chord is played in the Main zone.
- Drop Bass - lowers Bass I (Root) note by octave to be played on the lowest string possible for current chord position.

Drop Bass option has four selections - Off, On, Kbd, and Root.

With Drop Bass (Kbd) and Drop Bass (Root) options dropping Bass I note depends on the position of the chord notes played in Main zone or its Root note pitch:

- Drop Bass (Kbd) - Drop Bass will be applied if the majority of chord notes are lower in pitch than E3.
- Drop Bass (Root) - Drop Bass will be applied if the Root note of the chord is lower in pitch than E note.

SILENT



With Silent setup, the keys in the Main zone do not make any sound - they just define the chords; all strumming and picking is done with keys in the Repeat zone. You can use the option any time you want to control chord definition and strumming/picking independently.

MELODY

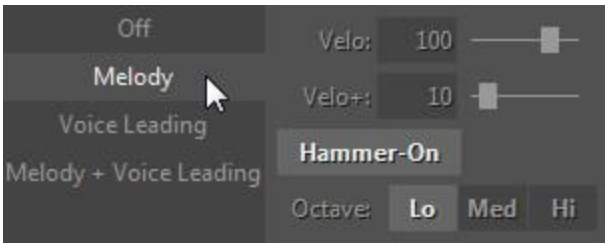
Melody setup allows you to play solo licks or bass lines in Main zone without switching from Chord mode or jumping to different position on keyboard, and even move individual voices within the played chord.

Melody combo box features four selections: Off, Melody, Voice Leading, and Melody + Voice Leading.

Melody

When in Chord setup, you can easily alternate between chord strums and melody licks in Main zone by changing the velocity of the played notes. Higher velocity will produce chord strums, while lower velocity will produce individual notes (i.e. real pitches you press on the keyboard). The velocity is completely user definable.

Melody options:



- Velo – input velocity threshold.
- Velo+ - add velocity value to melody notes if they are too soft.
- Octave - transpose Melody by octave.
- Hammer-On - On/Off Hammer-On effect when playing Melody.

Voice Leading

With this setup, you can change individual voices of the chord after it is played. Release any chord note while holding any other and then press another note with lower velocity. This will produce new note over the sustaining chord.

Voice Leading options:

- Velo - velocity threshold.
- Velo+ - add velocity value to new voice notes if they are too soft.
- Bass Only - will trigger the lowest notes possible.

Melody + Voice Leading

This setup is a combination of Melody and Voice Leading setups.

STRINGS

Strings setup lets you assign String keys of various ranges to Left or Right Repeat zones.

Strings combo box includes three selections: Off, Right Hand (C-C'), Right Hand (C-A#), Left Hand (C-A#):

String numbers will be displayed on the virtual keyboard in the appropriate Repeat zone.

Key to string layouts:

- Right Hand (C-C') - C, D, E, F, G, A keys trigger Bass I, Bass II, 4th, 3rd, 2nd strings, while A, A#, B and C' trigger the 1st string.
- Right Hand (C-A#) - C, D, E, F, G, A keys trigger Bass I, Bass II, 4th, 3rd, 2nd, 1st strings, while B and C' trigger Up Strum and Down Strum.
- Left Hand (C-A#) - C, D, E, F, G, A keys trigger Bass I, Bass II, 4th, 3rd, 2nd, 1st strings.

BLACK

Black setup allows you to assign individual sounds and effects on black keys of the string group. **Black** combo box features six selections: Unison, Chromatic, Harmonics, Strum, Mute, and 'Do Hi velo FX':

- Unison - doubles some strings for making single-string tremolo performance easy.
- Chromatic - sets the black string keys to play notes one semi-tone down from their respective string voices.

- Harmonics - black keys trigger Harmonics for current chord notes.
- Strum - C#, D#, and A# trigger Full Strum chords, while F# and G# trigger Muted Strums.
- Mute - all black keys trigger Muted Strums.
- Do Hi velo FX - black keys produce velocity free Hammer-On or Slider effect selected in Hi velo combo box of Velocity FX section.

CHORD SECTION

Chord section allows you to assign various velocity controlled strumming techniques, change chord position/inversion, and gain access to User Chord Editor window and Options panel.

DYN

Clicking **Dyn** (Dynamics) combo box gives you four selections: Full Strum, Velo Strum 1, Velo Strum 2, and Velo Strum 3.

FULL STRUM

Full Strum setup works similar strumming layout for both Main and Repeat zones used in Chords performance mode of the previous RealGMS versions.

VELO STRUM

Velo Strum 1, 2, and 3 FXs allow triggering fewer strings in a strummed chord controlled by velocity of pressed keys (lower velocities will proportionally omit

one by one the upper strings in a chord, up to the single Bass I note produced with lowest velocity value).

Velo Strum options:

- Velo - low and high velocity threshold numeric boxes.
- Voices - minimum number of voices (strings) in the chord played with lower velocity threshold value.

Repeat keys work differently with Velo Strum 1, 2 and 3:

- Velo Strum 1 - Repeat keys are not affected and work similar Repeat keys with Full Strum.
- Velo Strum 2 - Repeat keys follow velocity options and work similar Main zone keys.
- Velo Strum 3 - Repeat keys are not affected, but simply reproduce the number of strings of the last chord played in Main zone.

CHORD POSITION CONTROL

Chord position buttons - select the melodic position range for the built chords.

I - highest note is between E3 and G#3

II - highest note is between G3 and B3

III - highest note is between A#3 and D4

IV - highest note is between C#4 and F4

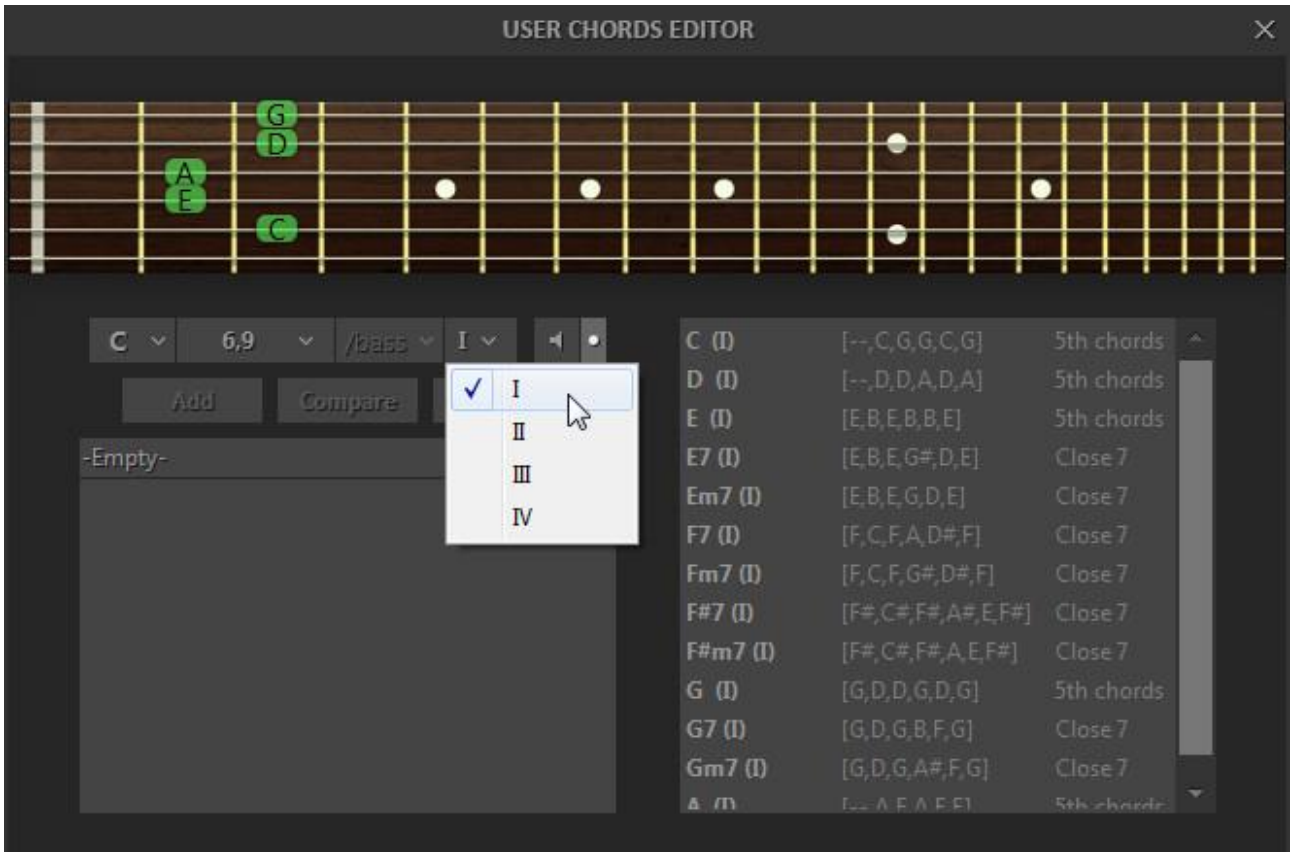
Kbd - melodic position range of the built chord depends on the octave position of the chord taken in the Main zone of the keyboard (with borders between E and E of the next octave). “Fixed” option provides I, II, III, and IV for consecutive octaves. Options “I-II”, “I-III”, I-IV” are useful when chord detect range has two octaves or less.

Chord Position/Inversion can be as well changed (up&down) via Key Switches during “live” performance.

USER CHORDS

Click **User Chords** button to open Chord Editor window.

Chord Editor allows to easily change any factory chord to any fingering you want, and save edited chords within User Chord banks for future use.



Chord Editor window

Select chord you want to edit by pressing keys on external MIDI keyboard, or by selecting Root/Type/Bass/Position in chord select boxes

EDITING CHORDS

- Click on fret to change/insert a note
- Click Compare button to compare edited and initial chord
- Click Add/Apply button to add edited chord to current bank
- Click Delete button to remove the selected chord from current Bank.

Note, that any User Chord lowest note will be used as Bass I Stroke for Pattern, Bass&Pick, and Bass&Chord layouts, regardless of Root note in the chord name.

AUDITIONING CHORDS

a) Press button with speaker icon

Small button at the right with a dot symbol activates Auto audition mode (any loaded or selected chord will be played automatically)

b) Right-click fretboard and strum strings with a mouse.

SAVING USER CHORD BANK

Press Save button, or rename bank and press Enter to save chord bank to Chord Library.

Delete Bank from Library by pressing 'Delete icon'.

All user chord names will be displayed with '*' symbol in the Info bar.

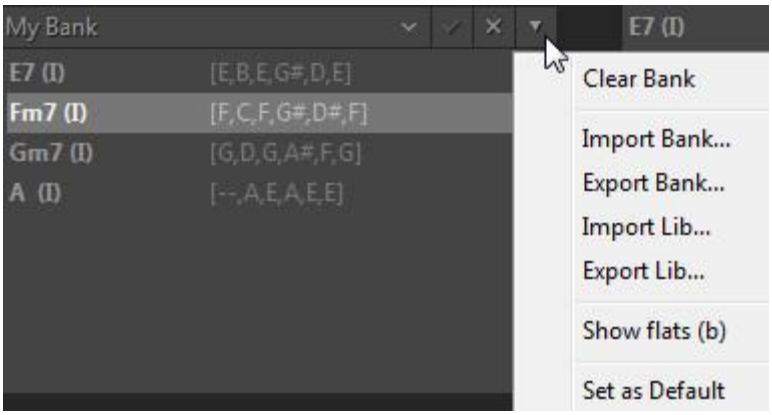
USER CHORDS VIEW

In the right part of Editor window you see the list of all user chords of all Banks you've created (except for current Bank selected in Bank view at the left), which allows you to compare edited chord fingerings from different Banks, as well as copy any user chord from one Bank to another by simply selecting chord in User Chord view list and pressing Add button.

Note, the Bank you select in User Chord Bank combo box will be used for all modes working with chords.

EXPORTING/IMPORTING USER CHORD BANKS

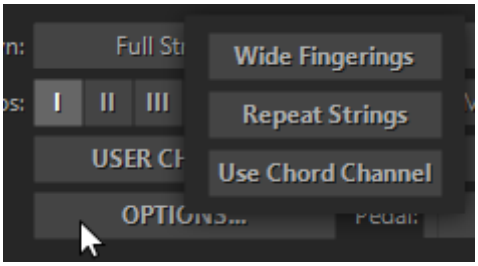
You can export/import single Chord Banks as well as the whole User Chord Library by clicking button with triangle icon and selecting the appropriate item in pop up menu:



If you want any Bank to load as default every time you run the plug-in, load the bank and check 'Set as default' item in popup menu.

OPTIONS

Click ‘Options...’ button to get access to additional options of CHORD section.



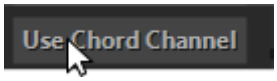
WIDE FINGERINGS

When Wide Fingerings button is activated, a number of chords with Bass I note on the 4th string (such as D major/minor/seventh, Eb major/minor/seventh, etc.) will be optimized to six voice fingerings for better use with String keys setup.

REPEAT STRINGS

With Repeat Strings activated repeating a chord note in Main zone will repeat only the voice(s) previously played with String key(s). With Repeat Strings Off the whole chord will be retriggered.

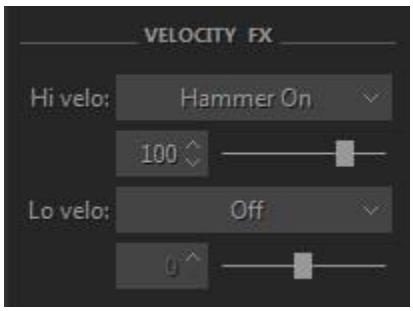
USE CHORD CHANNEL



With Use Chord Channel activated Melody will play via Chords audio channel.

VELOCITY FX SECTION

Velocity FX section features two groups of effects triggered with higher velocity (Hi Velo) and/or lower velocity (Lo Velo) than the threshold value set in the appropriate numeric boxes.



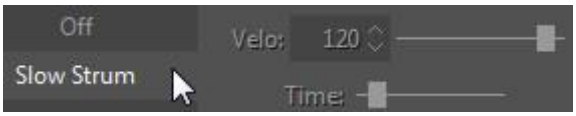
HI VELO FXS

Hi Velo (high velocity) combo box features seven selections: Off, Slow Strum, Slide Up, Slide Down, Hammer-On, Pre-Hammer, and Slider.

SLOW STRUM FX

With Slow Strum setup, playing chord in Main zone with high velocity value will perform Slow Strum.

Slow Strum FX options:



Velo - input velocity threshold.

Time - controls slow strum speed.

SLIDE UP FX

The effect performs automatic slide up TO the played chord.

Slide Up FX options:

- Velo - input velocity threshold.

- Time - controls effect duration in milliseconds.
- Steps - effect range in semitones.

SLIDE DOWN FX

The effect performs automatic Slide down (Fall) FROM the played chord.

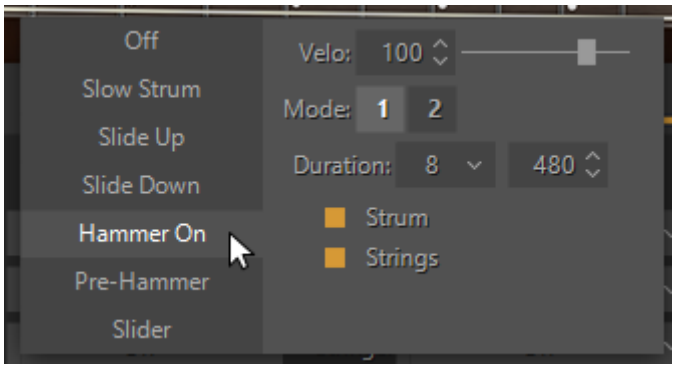
Slide Down FX options:

- Velo - input velocity threshold.
- Time - controls effect duration in milliseconds.
- Steps - effect range in semitones.

HAMMER-ON FX

This FX performs automatic Hammer-On on some strings inside the chord. Actually, the engine constructs so-called Pre-Hammer chord, which is Barre chord on the lowest fret of initial chord, and automatically plays Hammer-On to the fret(s) of initial chord.

Hammer-On options:



- Velo - input velocity threshold.
- Mode 1 - full chord is played with Hammer-on(s) inside the chord.
- Mode 2 - string(s) above the Hammer-ons are disabled in chords played in Main zone, but can be triggered with Repeat zone strums or String keys.
- Duration - controls Hammer-on speed in note duration units (4th, 8th, 16th, etc.) synced with host's Tempo setting.

- Strum LED - when activated will produce the FX with chords played in the Main zone.
- Strings LED - when activated will produce the FX with white String keys.

To produce velocity free Hammer-on with black String keys select 'Do Hi velo FX' setup in Black combo box of LAYOUT section.

PRE-HAMMER FX

This FX performs the Pre-Hammer chord, i.e. one finger Barre chord on the lowest fret of initial chord. To complete the Hammer-on effect you must repeat the chord with Repeat zone key and/or String keys, which will move pre-hammered fret(s) to the initial chord.

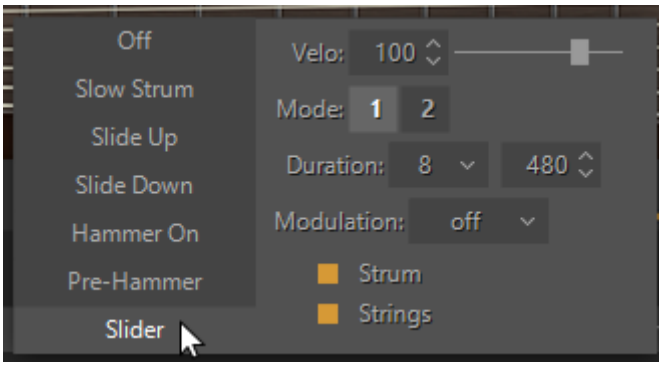
Pre-Hammer FX options:

- Velo - input velocity threshold.
- Mode 1 - full chord is played with the pre-hammered frets inside the chord.
- Mode 2 - strings above the pre-hammered frets are disabled.

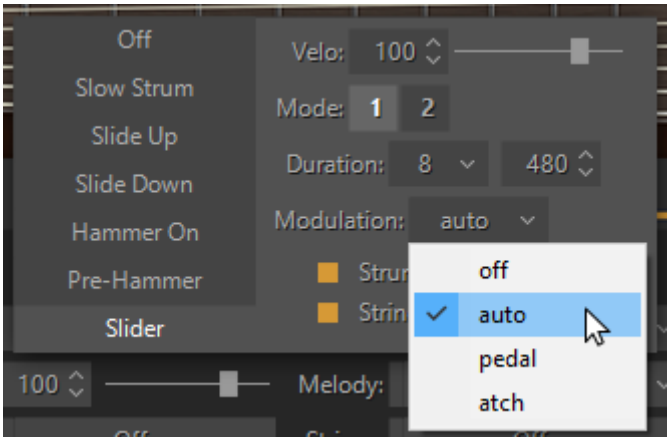
SLIDER FX

Slider FX emulates Slider (Bottleneck) guitar technique. The FX performs automatic bend from the pre-hammer chord frets (single fret Barre chord, constructed on the lowest fret of the initial chord) to the initial chord fingering.

Slider FX options:



- Velo - input velocity threshold.
- Mode 1 - full chord is played with bending notes inside.
- Mode 2 - strings above the bending notes are disabled.
- Duration - controls Slider FX speed in note duration units (4th, 8th, 16th, etc.) synced with host's Tempo.
- Modulation - enables automatic pitch modulation (vibrato) and has four selections: Off, Auto, Pedal, and Atch:



  - Off - no modulation.
  - Auto - automatically switches on the Modulation FX at the end of the note bend, and switches it off with the next note played.
  - Pedal - switch auto Modulation on/off by pressing/releasing Sustain pedal.
  - Atch - switch auto Modulation on/off by sending Channel Aftertouch MIDI CC data.

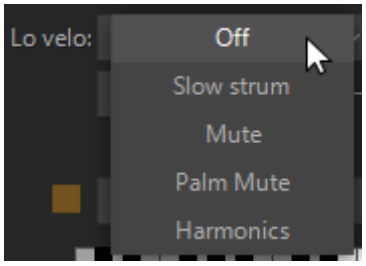
Modulation frequency and depth are controlled in Tune panel (Left menu bar on the upper left part of RealGMS window).

- Strum, Strings LEDs - activate the LED to assign the FX to the needed performance technique(s).

To produce velocity free Slider FX with black String keys select 'Do Hi velo FX' setup in Black combo box of LAYOUT section.

LO VELO FX

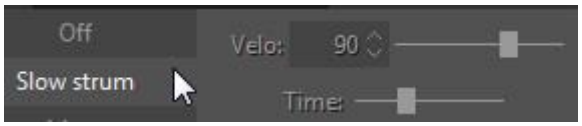
Lo Velo (low velocity) combo box features five selections: Off, Slow Strum, Mute, Palm Mute, and Harmonics:



SLOW STRUM FX

With Slow Strum setup, playing chord in Main zone with low velocity value will perform Slow Strum chord.

Slow Strum options:

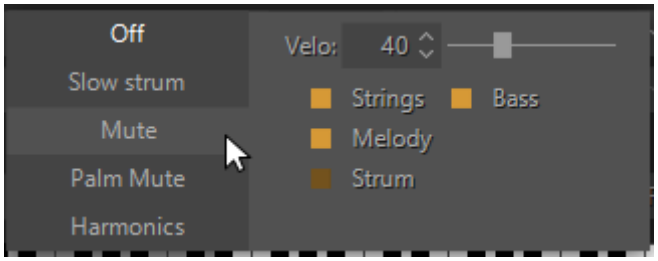


- Velo - input velocity threshold.
- Time - controls slow strum speed.

MUTE FX

Mute FX lets you produce Mute sound on lower velocity with different performance techniques.

Mute FX options:

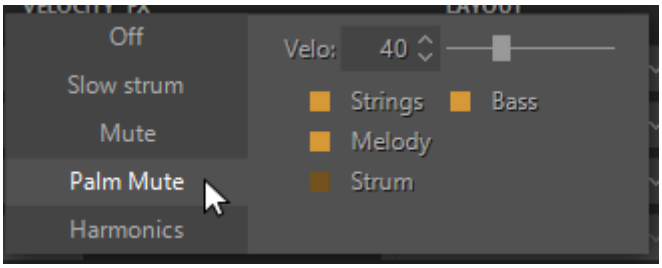


- Velo - input velocity threshold.

- Strings, Bass, Melody, and Strum LEDs - activate the LED to assign the FX to the needed performance technique(s).

PALM MUTE FX

Palm Mute FX lets you produce Palm Mute sound on lower velocity with different performance techniques.



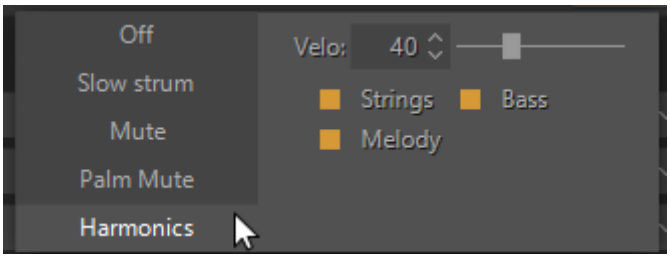
Palm Mute FX options:

- Velo - input velocity threshold.
- Strings, Bass, Melody, and Strum LEDs - activate the LED to assign the FX to the needed performance technique(s).

HARMONICS FX

Harmonics FX lets you produce Harmonics sound on lower velocity with different performance techniques.

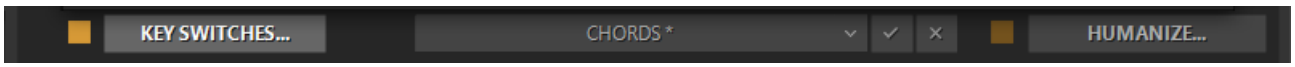
Harmonics FX options:



- Velo - input velocity threshold.
- Strings, Bass, and Melody LEDs - activate the LED to assign the FX to the needed performance technique(s).

KEY SWITCH FX

In the lower part of MULTI mode window you can find additional controls and options: Key Switches, Preset, and Humanize.



RealGMS's numerous guitar Effects can now be triggered in chordal modes within the MULTI mode using our advanced Key Switch system. Key Switch option allows to assign various FXs on Repeat Zone keys as well as easily create and use custom presets in RealGMS Key Switch panel.

Click 'Key Switches...' button to open the Key Switch panel:

Key Switch panel gives you access to 33 keys FX boxes of Left and Right Repeat zones, including 25 assignable FXs in each box.

Click FX box and select the needed FX in the popup list:

- **Slow Strum** - slow strum is performed when playing a chord in the Main zone.
- **Slide Up** - automatic slide up TO the played chord is produced.
- **Slide Down** - automatic slide down (Fall) FROM the played chord is produced.

- **Slide Down (trigger)** - triggers automatic Slide Down FROM the played chord /Velocity of trigger key affects slide dynamics/.
- **Hold** - provides sustain effect similar to the Sustain Pedal.
- **Chucka Full** - provides muted chords in 4ths on the keys of the Main zone.
- **ChuckaMuteKeys** - provides muted chords in 4ths on Black Repeat (Mute) keys.
- **ChuckaVeloLayer** - provides velocity controlled muted chords in 4ths on the keys in the Main zone.
- **Stop Slap (trigger)** - triggers hand slap over the fretboard sound, the volume is controlled by MIX 1 > Stop Slap slider.
- **Stop Strum (trigger) FX** - triggers powerful dead strum noise, the volume is controlled by MIX 1 > Stop Strum slider.
- **Pull Off (trigger)** - producing **Pull-Offs** on some strings inside the previously strummed chord on lower velocity, while producing full **Pre-Hammer** chord on higher velocity.
- **Chord Position** - changes chord position up or down.
- **Melody (Octave)** - Melody transpose.
- **String Keys** - switches on/off the String keys in Repeat zone.
- **Bass** - switches on/off Bass function in Main Zone
- **Melody** - switches on/off velocity free Melody function in Main zone range.
- **Chords** - when activated turns Main zone to velocity free Melody function, and switches between Chords and Melody.
- **Harmonics (Melody)** - switches on/off the Harmonics sound with Melody function in Main zone range.
- **Mute** - switches on/off the Mute sound.
- **Palm Mute** - switches on/off the Palm Mute sound.
- **Harmonics** - switches on/off the Harmonics sound.
- **Smacks** - switches Main zone keys to Smacks mode.
- **Smacks (trigger)** - triggers Smack sounds, repeated at random selection.
- **Solo mode** - switches to Solo Global mode.

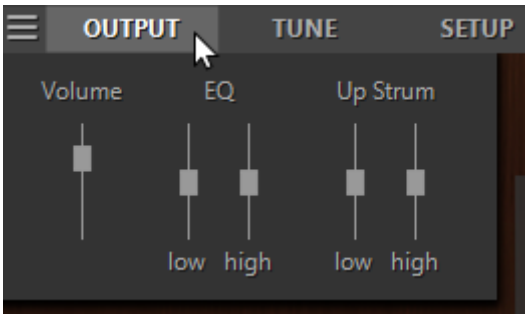
- Buzz on velo - adds string buzz noise to Melody sound, the volume is controlled by MIX 1 > Buzz slider.
- Buzz - adds/triggers string buzz noise to Melody sound, the volume is controlled by MIX 1 > Buzz slider.
- PickUp – pickups and their combination selection.

MAIN CONTROLS

LEFT MENU BAR

In the Left Menu bar you can get access to 4 panels to make global settings: Output panel, Tune panel, Setup panel, and Velo panel.

OUTPUT PANEL

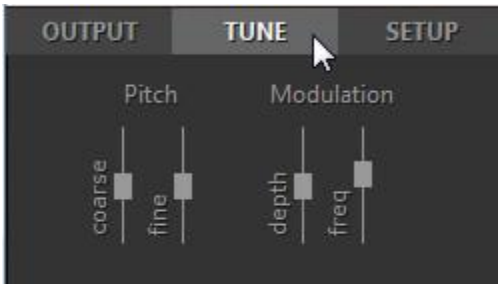


Volume (+10/-30db) - adjust output volume.

EQ - adjust internal equalizer parameters:

- High (+/- 10db).
- Low (+/- 10db).

TUNE PANEL



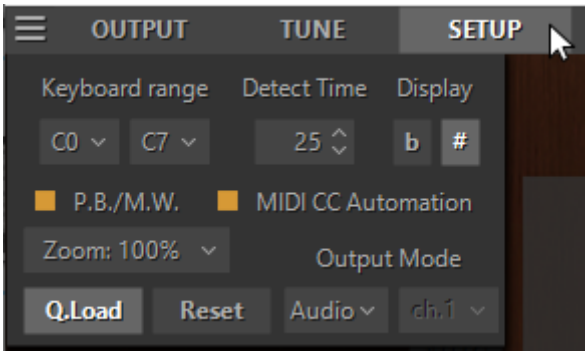
Pitch - adjust the master pitch:

- Coarse (+/-12 semitones).
- Fine (+/-100 cents).

Modulation - adjust the modulation envelope affected by Modulation controller (MIDI CC#1):

- Depth (0-100%).
- Freq (0.2 - 8.0 Hz).

SETUP PANEL



Keyboard range (C0- C7) - set the range of your keyboard.

Chord Detect time (0-50ms) - set the suitable delay for detecting chords taken in chord modes.

Display chords (#/b) - select sharps or flats for the chord names.

P.B. and M.W. - when activated allows to polyphonically use Pitch Bend, Modulation Wheel, and Aftertouch controllers with Sustain Pedal, i.e., the controllers will affect only on actually pressed note(s), while other note(s) being sustained with a Pedal but physically released will stay untouched. When turned off all controllers work normally.

MIDI CC Automation - switches on/off MIDI CC Automation activity.

Enable Colors – switches on/off colored guitar background.

UI Scaling (80%-200%) – resize RealGMS UI in popup menu.

Q.Load - pressing Quick Load button allows to quickly load samples and drastically save RAM.

Reset - resets all modified parameters in all modes to their factory values.

Output mode – select between Audio, MIDI, Both options.

Using MIDI Out functionality, the actual MIDI output, including arpeggios, patterns, and strums generated by notes you play in the "Repeat Zones", can be

played back through any other synth or sampler. Most (but not all) DAWs that support MIDI input from a virtual synth support recording its MIDI output as well.

Here are a few reasons you might want to take advantage of MIDI Output functionality:

1. To double the RealGMS sound with another synth/sampler

2. To replace your guitar part with another sound altogether

3. To generate a MIDI file that's readable by your notation program

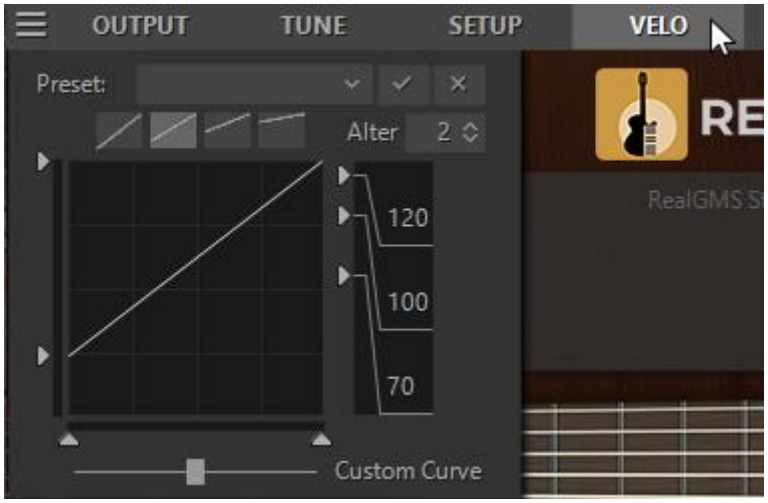
The "Audio/MIDI/Both" options are important, and as follows:

- **Audio**: You'll hear the RealGMS samples only, just as you would if you weren't sending MIDI Out to your synth.
- **MIDI**: You'll hear only the synth being driven by the MIDI output from RealGMS. The RealGMS samples will not sound.
- **Both**: You'll hear both the RealGMS samples and the synth being driven by the MIDI output from RealGMS.

Select "MIDI" or "Both" to take advantage of MIDI Out functionality.

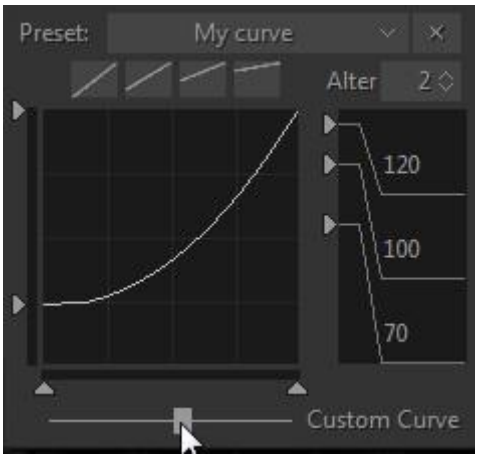
VELO PANEL

Click Velo button in Left menu bar to open the Velocity panel.

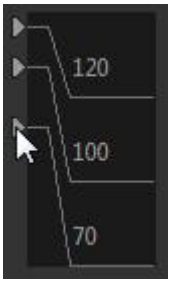


Velocity panel provides Preset, Velocity curve buttons, Velocity curve graph, Velocity thresholds control, and Alter samples numeric box.

Select the output velocity curve for your performance by pressing one of 4 buttons.



Create custom velocity curves with Dynamics slider and save them in Velocity combo box as presets for future use.



Adjust the velocity thresholds between sample groups for hardest, hard, and soft performance dynamics.

Alter samples (1-5) - provides 5 positions of randomly alternating samples while performing repetitive notes (position 1 provides up to 10 different samples, while position 5 provides up to 30 different samples).

RIGHT MENU BAR

In the Right Menu bar you can get access to Timing panel, Mixer panel, FX Mixer panel, Reverb panel, and Audio FX panel.

TIMING PANEL

Strum time (5-200ms) - adjusts the time between the notes played in the strumming chords (Harmony, Chords, and Bass & Chord modes) as well as delay for more than one note played simultaneously in Solo and Bass & Pick modes.

Slow Strum time (45-300ms) - adjusts the strum time for Slow Strum strokes.

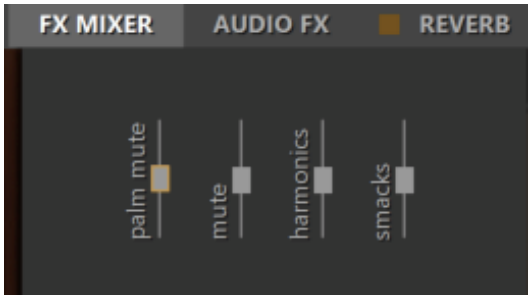
Release time (50-200%) - adjusts how long the note sounds after releasing the key (MIDI note end).

MIXERS

RealGMS has two sound/noises Mixers, accessible by clicking MIXER and FX MIXER buttons of the Right menu bar.

MIXER panel includes volume controls of all noises and noise FXs (range: +/- 12dB):

FX MIXER panel includes volume controls of all additional sounds and sound FXs (range: +/- 12dB):



REVERB PANEL

Reverb panel provides effect on/off button, preset combo box, and various controls:

Room Size - Use this to set the size of the virtual room where the reverb is created (range: 0-100%).

Damp - Add damping to create a warmer sound with less “edge” (range: 0-100%).

Dry/Wet - Sets the relative dry/wet output level (range: 0-100%).

Width - Adjusts the stereo width of the reverberation effect (range: 0-100%).

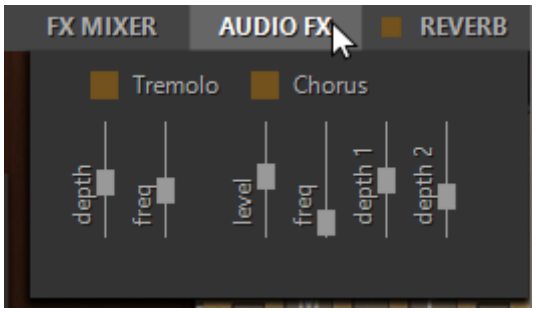
LP-HP:

- LP- Adjusts the low cut-off frequency (range: 2-200 Hz)
- HP - Adjusts the high cut-off frequency (range: 0.5-10 kHz)

Pre-Delay - Controls the delay time between the direct input signal and the first reverb reflection.

Reverb Type - Hall and Room are self-explanatory. Plate emulates the plate reverbs common in the ’60s.

AUDIO FX PANEL



1. **Tremolo** - adjust stereo tremolo parameters:

- Depth (0-10%)
- Freq (0.2-12 Hz)

2. **Chorus** - adjust stereo chorus parameters:

- Level (0-100)
- Freq 1 (0.1-6.0 Hz)
- Depth 1 (0-100%)
- Depth 2 (0-15)

REALGMS EFFECT TABLE AND DESCRIPTION

Mute	Effect, Key/Pedal/Mod.Wheel/Velocity Switch
Palm Mute	Effect, Key/Pedal/Mod.Wheel/Velocity Switch
Harmonics	Effect, Key/Pedal/Mod.Wheel/Velocity Switch
Smacks	Effect, Key/Pedal/Mod.Wheel/Velocity Switch
Legato (1-2 Steps)	Effect, Key/Pedal/Mod.Wheel Switch
HammerOn (Legato)	Effect, Key/Pedal/Mod.Wheel/Permanent Switch
Slide (Legato)	Effect, Key/Pedal/Permanent Switch
Tremolo (NoteOff)	Key/Pedal Switch
Tremolo	Effect, Key/Pedal/Velocity Switch
Tremolo 1-beat	Effect, Key/Pedal/Velocity Switch
Trill	Effect, Key/Pedal/Velocity Switch
Trill 1-shot	Effect, Key/Pedal/Velocity Switch
Slide Up	Key/Pedal/Mod.Wheel/Velocity Switch*, P.Bender*
SlideUp (trigger)	Key Switch
Slide Down (Fall)	Key/Pedal/Mod.Wheel/Velocity Switch*, P.Bender*
SlideDown (trigger)	Key Switch
Bend	Key/Pedal/Velocity Switch
Reverse Bend	Key/Pedal/Velocity Switch
Unison Bend	Key/Pedal/Mod.Wheel/Velocity Switch
Hold (1-2 Steps Mono)	Effect, Key Switch
Modulation	Key/Mod.Wheel
Interval	Effect, Key/Pedal/ Mod.Wheel/Velocity Switch
Fret Position	Mouse, Key/Pedal Switch
PickPosition	Mouse*, Key/Pedal Switch
String select	Key Switch
VeloMute	Key Switch
Chucka FullRange	Effect, Key/Pedal* Switch
Chucka MuteKeys	Effect, Key/Pedal* Switch
Chucka VeloLayers	Effect, Key/Pedal/Mod.Wheel/Velocity Switch
Mode Toggle	Key/Pedal/Mod.Wheel Switch

velo>	Key/Pedal Switch
velo<	Key/Pedal Switch
Transpose	Effect, Key/Pedal/Mod.Wheel/Velocity Switch
Fret Noise (trigger)	Key/Pedal Switch
MonoBend)	P.Bender, Mod.Wheel
VeloAdd (velo +/- control)	P.Bender
Open Strings Lock**	Pedal Switch
Slow Strum**	Velocity Switch
Buzz	Key/Velocity Switch
Buzz on velo	Effect/Key Switch
Slap	Velocity Switch
Slap on velo	Effect/Key Switch
Stop Slap (trigger)	Key Switch
Stop Strum (trigger)**	Key Switch
Multi mode	Key Switch
Melody octave**	Key Switch
Melody**	Key/Velocity Switch
Bass**	Key Switch
String keys**	Key Switch
Chords**	Key Switch
Hammer-on in chords**	Velocity Switch
Pre-Hammer in chords**	Velocity Switch
Pull-Off (trigger) chords**	Key Switch
Harmonics (Melody)**	Key Switch
Harmonics chords**	Key/Velocity Switch
Mute chords**	Key/Velocity Switch
Palm Mute chords**	Key/Velocity Switch
Slider in chords**	Key/Velocity Switch

All FXs are available in Solo mode except for the marked:

* available in Multi mode as well.

** available only in Multi mode.

Mute FX - left-hand muted sound for notes in the Main zone. Note that the volume of the Mute FX is controlled by Mixer > Sounds > Mute slider.

PalmMute FX - sound muted near the guitar bridge for notes in the Main zone. It is a similar effect to Mute FX, however produces a slightly different sound. Note that the volume of the PalmMute FX is controlled by FxMixer > Palm Mute slider.

Harmonics FX - chromatic Artificial Harmonic sound for notes in the Main zone. Note that the volume of the Harmonics FX is controlled by FxMixer > Hrmnx slider.

Smacks FX - 42 different string scrapes, each controlled by the different notes in the Main zone ranging from E1 to A#4. Note that the volume of the Smacks FX is controlled by FxMixer > Smacks slider.

HammerOn (Legato) FX produces Hammer-On/Pull-Off articulation. Hammer-On and Pull-Off guitar effects enable the playing of grace notes, mordents, trills with a single pick (and single initial attack). With Hammer-On enabled, press and hold a single key. When a second key is played, it plays without the initial attack and stops the first note. While continuing to hold the first key, release the second key and the first note is played again without the initial attack. When the second key is played higher than the first key, this is typically called a hammer-on. If the second key is lower than the first key, this is typically called a pull-off. The Hammer-On effect has a numeric box allowing the user to select in semi-tones the greatest distance between the first and second note played to be triggered with the Hammer-On/Pull-Off effect.

Slide (Legato) FX produces sliding articulation between two notes played legato (glissando with initial attack on the first note only). The Slide FX numeric box controls the maximum number of semi-tones between two notes that the slide FX will occur. The Slide FX slider controls the speed of the slide.

Tremolo (NoteOff) FX automatically plays additional same note(s) on key(s) release allowing to produce semi-automatic tremolo with easy dynamics control.

Tremolo FX plays the note(s) repeatedly with the base speed provided by the Tempo setting (is synched with host's tempo). Multiples above the Tempo setting are controlled by the Tremolo FX pull-down menu with choices of 4th, 4T (triplet), 8th, 8T, 16th, 16T, 32nd, 32T, 64th, and 64T note durations. Note that while Tremolo FX is enabled any secondary notes played are sustained for as long as the first note is played.

Tremolo 1-beat FX works similar Tremolo FX but plays number of notes fitting in one beat of a measure before sustaining. The speed is controlled by the Tempo setting (is synched with host's tempo).

Trill FX plays a continuous trill for as long as the note(s) is held. The Trill FX numeric box specifies (in semi-tones above the note(s) played) the interval of the trill. The speed of the trill is controlled by the Tempo setting and the Trill FX pull-down menu with choices of 4th, 4T (triplet), 8th, 8T, 16th, 16T, 32nd, 32T, 64th, and 64T note durations.

Trill 1-shot FX plays a mordent ahead of the note(s) played. The Trill 1-shot FX numeric box specifies (in semi-tones above the note(s) played) the interval of the mordent. The speed of the mordent is controlled by the Tempo setting and the Trill 1-shot FX pull-down menu with choices of 4th, 4T (triplet), 8th, 8T, 16th, 16T, 32nd, 32T, 64th, and 64T note durations.

SlideUp FX articulates automatic slide up TO the note(s) played. The SlideUp FX numeric box specifies (in semi-tones) the interval to start the slide from. The SlideUp FX slider controls the speed of the slide.

SlideUp (trigger) FX triggers automatic slide up FROM the sustaining note(s). Velocity of trigger key affects slide dynamics.

SlideDown FX articulates automatic slide down FROM the note(s) played. The SlideDown FX numeric box specifies (in semi-tones) the destination interval for the slide. The SlideDown FX slider controls the speed of the slide.

SlideDown (trigger) FX triggers automatic slide down FROM the sustaining note(s). Velocity of trigger key affects slide dynamics.

Bend FX articulates automatic bend up TO the note(s) played. The Bend FX numeric box specifies (in either 1 or 2 semi-tones) the interval to start the bend from. The Bend FX slider controls the speed of the bend.

ReverseBend FX articulates automatic 'pre-bend and release' down to the note(s) played. The ReverseBend FX numeric box specifies (in either 1 or 2 semi-tones) the interval to start reverse bend from. The ReverseBend FX slider controls the speed of the bend.

UnisonBend FX articulates two notes played, one being the played on the Main zone, and the second one starting from one or two semi-tones below is bent up to the note played. The UnisonBend FX numeric box controls if the second bent

note starts from one or two semi-tones below. The UnisonBend FX slider controls the speed of the bend.

Hold FX provides sustain effect similar to the Sustain Pedal.

Modulation FX provides automatic modulation similar to Modulation (CC#1).

Interval FX plays additional note(s) to the one played in the Main zone. Interval FX pull-down menu options are: mono, 4th down, 5th up, Octave up, Power (5th + 4th up), Power2 (5th + 4th up), 2 Octaves up, Power Oct (two power chords in octave) and Power 2 Oct (two power chords 2 in octave). Note that when Interval FX is enabled, the keyboard is in monophonic mode and only a single key can be played at a time.

FretPosition FX controls the Capo along the fretboard. The FretPosition FX pull-down menu option of “D#5 … G#5” allows the Capo to be controlled by the 6 Right Repeat keys starting from D#5, up to G#5 selecting the 12th fret. The FretPosition FX pull-down menu option of “Open" forces the Capo to remain open. The remaining pull-down menu options select one of the 12 frets (frets numbers marked with *, or ** correspond to the frets marked on the RealGMS fretboard).

PickPosition FX controls the position of the pick on the strings to provide different sound (farther or closer to the bridge). The PickPosition numeric box ranges from -7 to +7. The Pick Position can also be changed via the main RealGMS window by clicking and dragging the pick to the left or right on the high E-string.

String Select FX allows to manually select the needed string, which lets you play as many notes on the selected string as possible for the string range.

ChuckaFull FX provides muted chords in 4ths (so called, chucks) played in the Main zone which emulates ‘chucka-chucka’ guitar technique. Main zone is in mono mode with each key triggering individual chord/fret. With notes played from E3 and higher, ChuckaFull FX chords will move higher with each increased semi-tone along the fretboard. Right Repeat zone keys repeat the chords played in Main zone and can alternate between two string groups: D#5 through F#5 trigger lower strings (5-4-3 strings), and G5 and higher trigger upper strings (3-2-1 strings). Left Repeat keys (D#1 and lower) repeat the last layer produced in Right Repeat zone.

ChuckaMuteKeys FX provides muted chords in 4ths with Black Repeat (Mute) keys (Main zone and white keys of Repeat zone continue to work normally). Right Repeat zone Mute keys can alternate between two string groups: D#5 through F#5 trigger lower strings (5-4-3 strings), A#5 and higher trigger upper strings (3-2-1 strings), and Left Mute keys (D#1, C#1, etc..) repeat the last layer produced in Right Repeat zone.

ChuckaVeloLayers FX provides muted chords in 4ths played in the Main zone similar to ChuckaFull FX, however can produce 3 velocity controlled string groups by any key of the whole range. Low velocity strokes trigger 5-4-3 string layer, middle velocity strokes trigger 4-3-2 strings layer, while high velocity strokes trigger 3-2-1 string layer (the higher velocity value - the higher string group is triggered).

Mode Toggle FX toggles from Solo mode to Chords, Bass&Chord, or Bass&Pick mode and back to Solo.

Velo > FX activates higher Velocity Switch FX selected in Higher Velocity Switch box.

Velo < FX activates lower Velocity Switch FX selected in Lower Velocity Switch box.

Transpose FX - transposes all notes by the selected interval (+/- 3 octaves).

Fret Noise (trigger) FX triggers Fret Noise sound. Enabling the FX will switch off the automatic Fret Noise generating on note-offs.

Buzz FX - string buzz noise, volume controlled by MIX1 > Buzz slider.

Buzz on velo FX – triggers Buzz noise on higher velocity.

Slap FX - string slap sound, volume controlled by MIX1 > Slap slider.

Stop Slap (Trigger) FX - hand slap over the fretboard noise, the volume is controlled by MIX 1 > Stop Slap slider (as Key Switch FX in MULTI mode can be assigned on black String keys as well).

Stop Strum (Trigger) FX - powerful dead strum noise, the volume is controlled by MIX 1 > Stop Strum slider (as Key Switch FX in MULTI mode can be assigned on black String keys as well).

Multi mode FX- switches from Solo to Multi mode.

Melody (octave) FX – transposes Melody notes.

Melody FX – switches from chord to Melody setup.

Bass FX - switches from chord to Bass setup.

String Keys FX – switches on String Keys.

Chords FX - switches on Chords setup (when activated Main zone keys are in Melody mode).

Hammer-On FX - produces automatic Hammer-On in chords.

Pre-Hammer FX – produces pre-hammered chord.

Pull-Off (trigger) FX - produces pull-off in chord.

Harmonics (Melody) FX – switches from chords to Melody with Harmonics sound.

Harmonics FX – switches on Harmonics sound for chords.

Mute chords - switches on Muted sound for chords.

Palm Mute chords - switches on Palm Muted sound for chords.

Slider FX - produces automatic pitch bends from pre-hammer notes to initial chord notes in chords.

MIDI CONTROLLER ADDITIONAL FXS

MonoBend FX (Pitch Bender and Modulation Wheel) applies pitch bending: a) only to the lowest of simultaneously played notes, b) only to the first bent and held note, allowing to emulate guitar specific single-string bending techniques: Unison Bend, Bend/Release combined with sustained note(s), etc...

Example 1 - assign MonoBend to P.Bender, press and hold 2-3 notes in Main zone, them move P.Bender - only the lower note will be bent (if you then move P.Bender back while holding all played notes only the first note will be affected).

Example 2 - assign MonoBend to P.Bender, play a note, move P.Bender to bend the note, then holding the first note bent play the second note higher or lower the first one - next note(s) will play their real pitch (if you then move P.Bender back while holding all played notes, only the first previously bent note will be affected).

VeloAdd (Pitch Bender) allows continuous adding/reducing velocity value (+/-) to the played notes.

Slide FX (Pitch Bender and Modulation Wheel) allows manual articulation of Up/Down slides from/to played note(s).

ADDITIONAL FXS IN CHORDAL MODES

Slow Strum on Higher Velo (Velocity Switch FX) - in all chordal modes you can set a velocity value, higher which slow strum will be performed when playing a chord in the Main zone.

Slow Strum on Lower Velo (Velocity Switch FX) - in the same way you can set a velocity value below which slow strum will be perform when playing a chord in the Main zone.

Slide up on Higher Velo (Velocity Switch FX) produces automatic slide up TO the played note/chord.

Slide down on Higher Velo (Velocity Switch FX) produces automatic slide down (Fall) FROM the played chord.

Open Strings Lock (Pedal Switch FX) - in case open strings are used in a chord (such as A Open, E Open) they will be engaged (locked) while other strings will play the notes of the further chords. When Open Strings Lock FX is turned on the further chords played with upper note higher than E3 will automatically move chord position up along the fretboard.

Note, that if Modulation FX box is activated, the effect selected in M.W. (Modulation Wheel) box will not work.

CHORD MAP

RealGMS can detect 30 chord types.

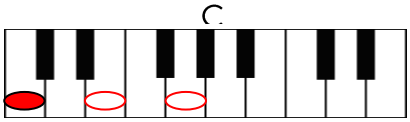
The following chart lists the available chord types and the degrees unnecessary for chord detection that you can omit while entering chords.

CHORD TYPE	CAN BE OMITTED
ma	V, III
6	-
add9	-
sus4	-
sus2	-
6/9	V
maj7	V, V+III
maj9	V
maj7(b5)	-
maj7(#5)	-
m	V
m6	-
m(add9)	-
m7	V
m(maj7)	V
m7(b5)	III,
m9	V
m7(11)	VII, V
7	V, III+V
7sus4	-
7(b5)	-
7(#5)	-
9	V
9sus4	V
7(b9)	V
7(#9)	V

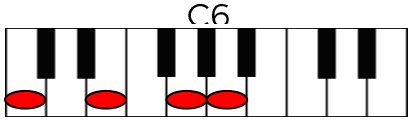
9(b5)	-
7(add13)	V
dim7	III, VII, III+VII
aug	-

All chords except ma6, min6, min7(11), ma6/9 are detected in all inversions and note combinations.

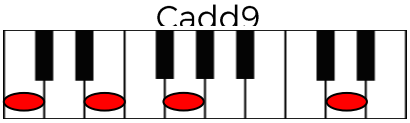
C



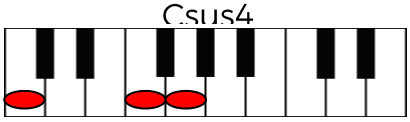
C6



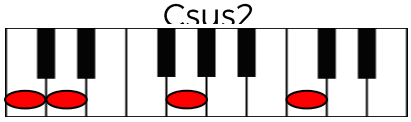
Cadd9



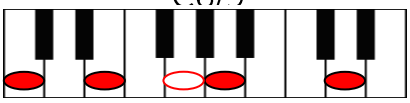
Csus4



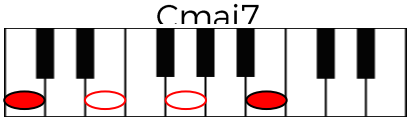
Csus2



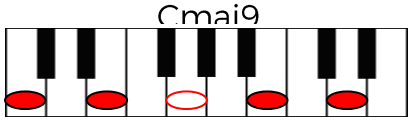
C6/9



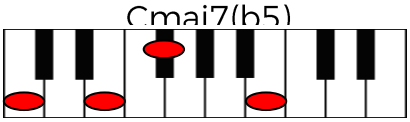
Cmaj7



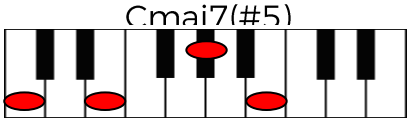
Cmaj9



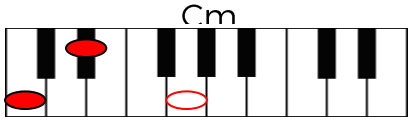
Cmaj7(b5)



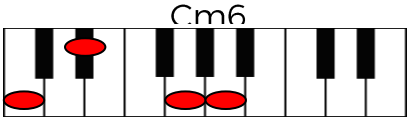
Cmaj7(#5)



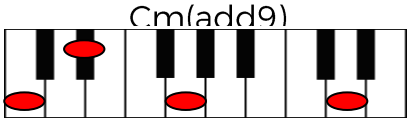
Cm



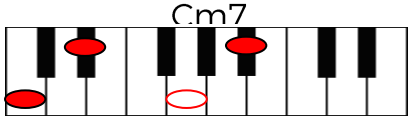
Cm6



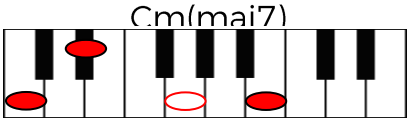
Cm(add9)



Cm7



Cm(maj7)



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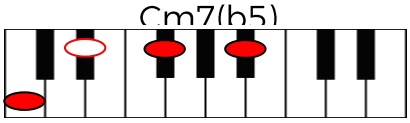
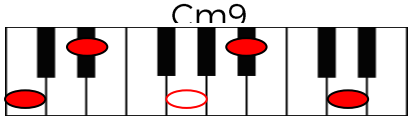
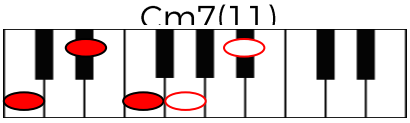


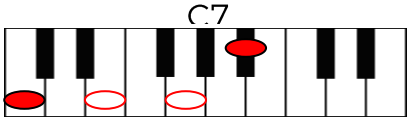
Cm9



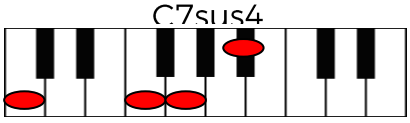
Cm7(11)



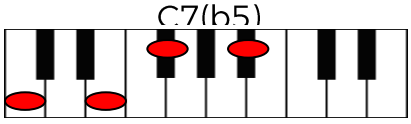
C7



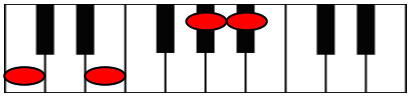
C7sus4



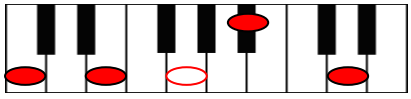
C7(b5)



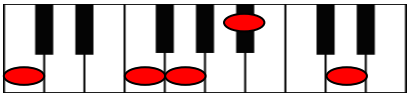
C7(#5)



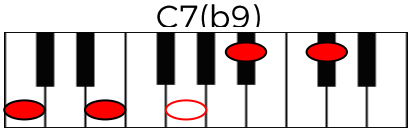
C9



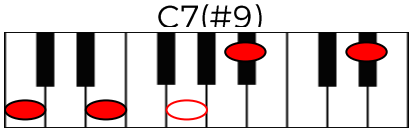
C9sus4



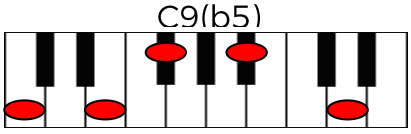
C7(b9)



C7(#9)

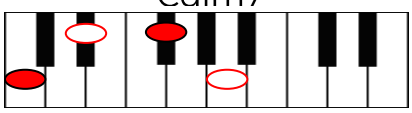


C9(b5)

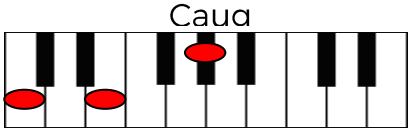


C7(add13)

Cdim7



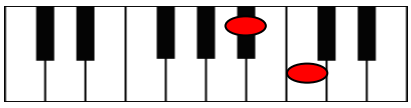
Caug



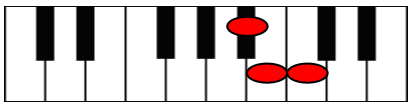
1-note chord detect system also included:

C7

Cm



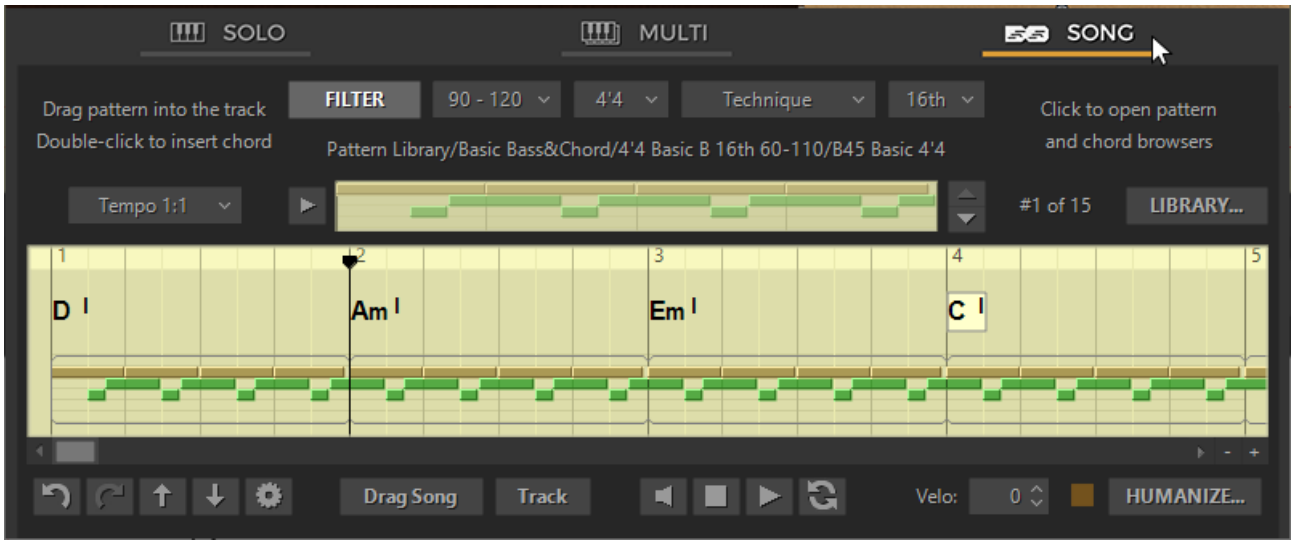
Cm7



- obligatory

- can be omitted

SONG MODE



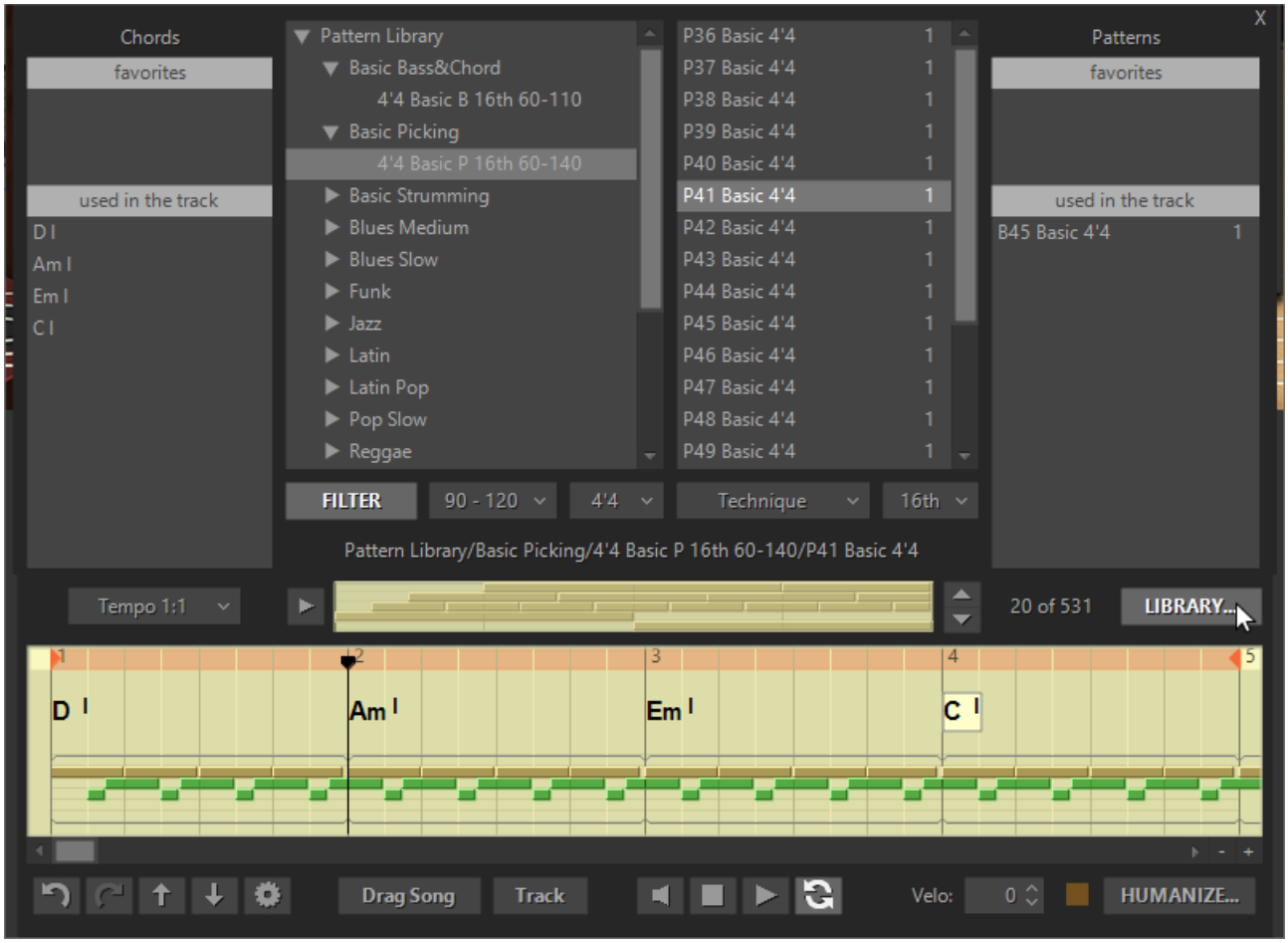
Song mode window

Song mode turns RealGMS into a powerful and easy-to-use song writing tool allowing you in no time create perfect guitar backing tracks for your songs. Insert chord symbols in the needed measures of the built-in Song Track, browse and drag and drop patterns into it - and your guitar part is ready!

In the lower part of Song mode window you see Song track section where you can insert chords and patterns for your guitar part.

WORKING WITH PATTERNS

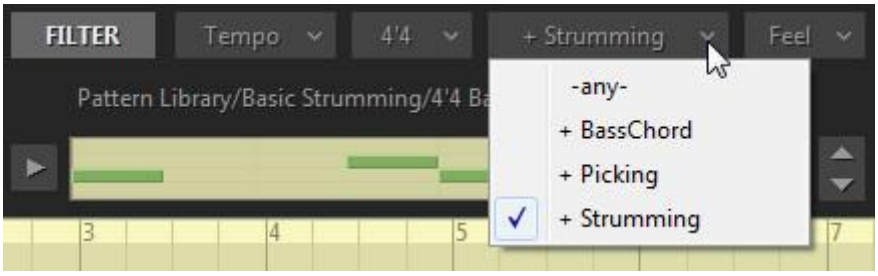
PATTERN LIBRARY BROWSER



Click the 'Library' button to open Pattern Library browser.

STYLE FILTER

Pattern Library includes 1250 guitar rhythm patterns organized in various musical categories and styles (folders and subfolders). To let you easily find the suitable patterns for your song we have developed the powerful Style Filter allowing to automatically select pattern sets by musical criteria: tempo range, meter, playing technique, and rhythm feel.



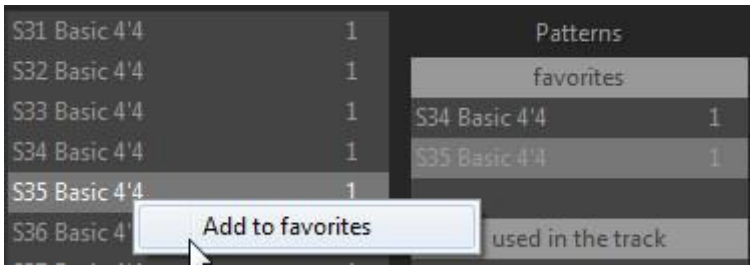
Simply press Filter button to switch it on, select the needed item in popup menu of the appropriate Filter combo boxes, and the Filter will hide folders and patterns not matching the required criteria.

Selecting the folder or subfolder of the Pattern Library tree view will load the available set of patterns into Pattern list pane at the right.

Select pattern name in the list to load pattern to Pattern view strip and press Play button at the left of Pattern view to audition the selected pattern. Navigate through the pattern list by clicking arrow buttons at the right of Pattern view or alternatively use Up/Down Arrow keys of the computer keyboard.

To the left of Pattern view is the Tempo combo box allowing you to make pattern tempo twice lower or higher by simply selecting the appropriate item in popup menu. Note, that pattern inserted into the Song Track will play in the current tempo selection.

In case you find pattern that you want to keep for future use, drag it from the Pattern list to the 'Favorites' section, or alternatively right click the pattern and select 'Add to favorites' in popup menu.

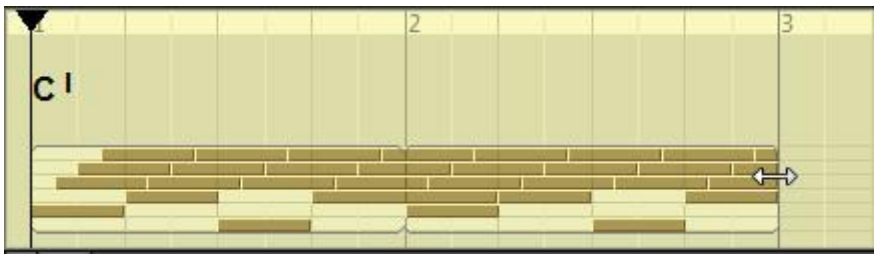


Once you found the needed pattern simply drag and drop it into the Pattern track located in the lower part of the Song track. You can drag patterns from Pattern view, Pattern list, 'Favorites', and 'Used in the track' sections.

PATTERN TRACK

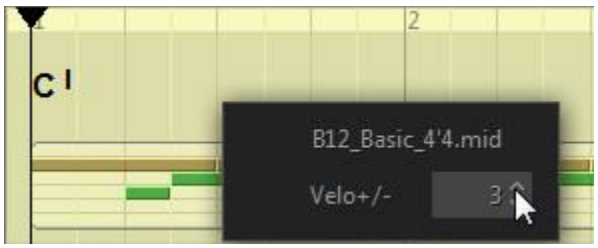
Pattern inserted into the Song track will automatically appear in 'Used in the track' section, which allows you to easily use it in other places of the song by dragging it directly from 'Used in the track' section.

You can shorten or multiply pattern in the Song track by simply dragging its right boundary.



Right-click the song pattern to open a context menu allowing you to copy/paste/delete pattern(s), or split and chop the multiplied pattern, as well as get access to Pattern Properties panel.

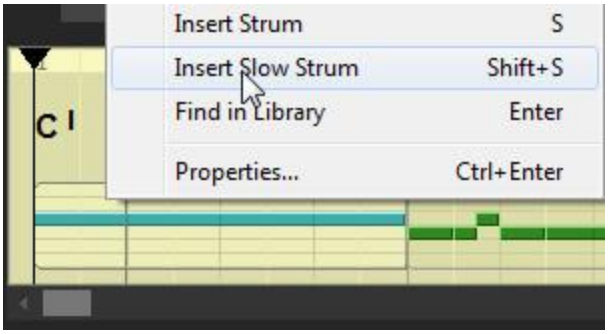
Properties panel displays the pattern name and allows modifying the dynamics of the pattern by adding/reducing the output velocity of pattern notes.



Double-clicking song pattern will reveal it in Pattern Library, alternatively you may right-click the pattern and select 'Find in Library' item in popup menu.

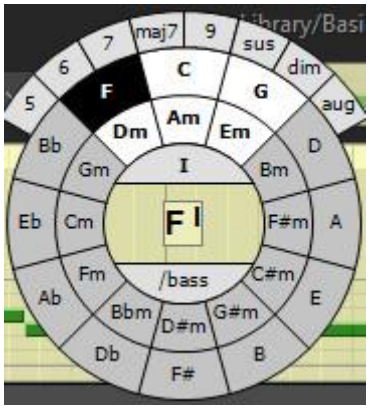
INSERTING SINGLE STRUM

It is possible to insert a single strum directly into the Pattern track rather than finding it in the Library. Right-click the Pattern track in the needed place and select Insert Strum or Insert Slow Strum in popup menu.



WORKING WITH CHORDS

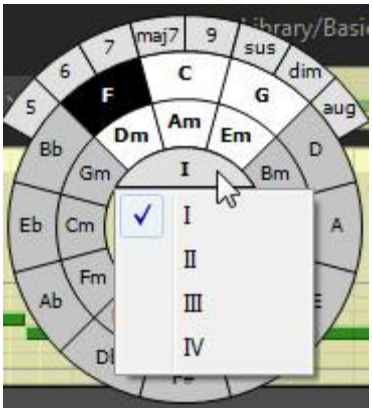
CHORD SELECTOR



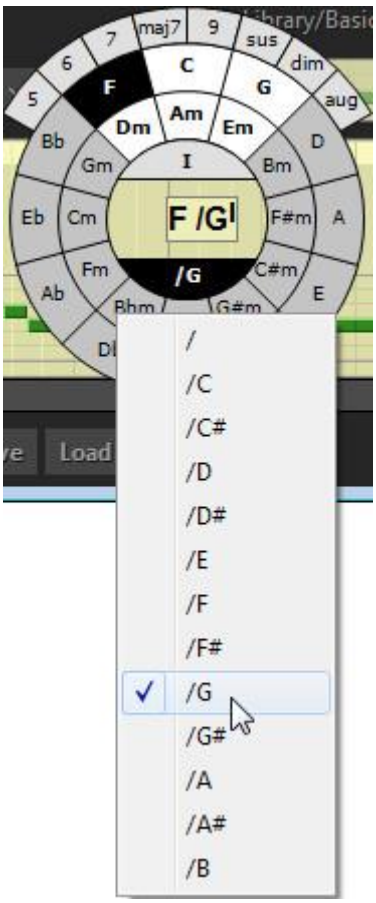
Double-click the chord track to open the Chord Selector based on the Circle of Fifths (alternatively right-click and select 'Insert chord' in popup menu, or press Enter on computer keyboard). Chord Circle provides all major and minor chords and displays a Key Center including six relative chords at the top. To change the Key Center simply right-click the appropriate major or minor chord name in the circle.

Click chord name button to select minor or major chord. Buttons on the upper panel allow selecting other chord types and/or extensions.

You can change Chord Position (inversion) of the chord by clicking the upper segment of inner circle and selecting the needed position number in popup list.



If you want to create slash bass chord you can add alternative bass note to the chord by clicking the lower segment of the inner circle and selecting the needed note in popup list.

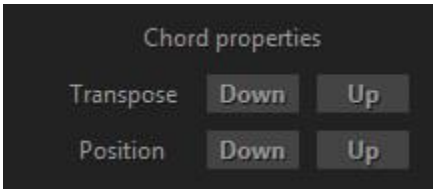


To insert the selected chord into the chord track press Enter key on computer keyboard, or alternatively click the center part of Chord Selector. To cancel inserting press Esc key.

EDITING CHORDS

Select the chord and press Enter, or simply double-click it, or alternatively right-click the chord and select Edit... in popup menu to bring up the Chord Selector. When the edits are done press Enter to confirm the changes. To cancel edits press Esc key.

Right-clicking the chord will bring up a menu for copying and pasting of chord(s), deleting selected chord(s), bringing up Chord Selector to edit a chord, as well as getting access to Chord Properties panel.



Clicking on Up/Down buttons will transpose chord(s) by semitones (alternatively use +/- computer keys), as well as change chord position (alternatively use Ctrl + '+/-' computer keys).

You can also change '#' (sharp) to 'b' (flat) and vice versa in the chord name by right-clicking the chord and selecting 'Enharmonic shift' item in popup menu, or alternatively press '*' computer key.

'FAVORITES' SECTION

This section allows you to reserve the chord set you are going to further use in a song and then simply drag them to the needed measures of the Chord track.

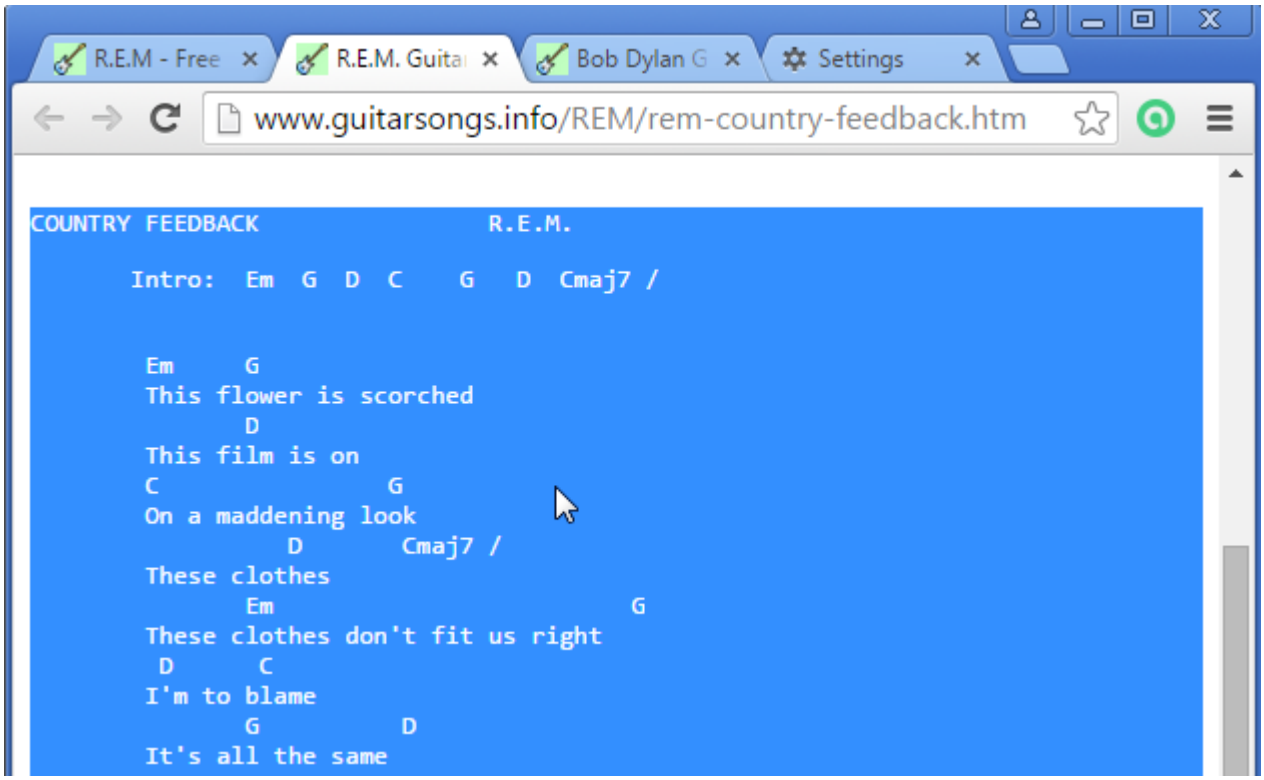
There are three ways to put chords into the 'Favorites' section:

1. Import the chord set from the WEB page by simply dragging the selected text directly to 'Favorites' section
2. Import the chord set from any standard chords/lyrics Text Document file containing chord names.
3. Insert chords one-by-one using Chord Selector (double-click to open Chord Selector, or alternatively right-click and select 'Add chord' in popup menu)

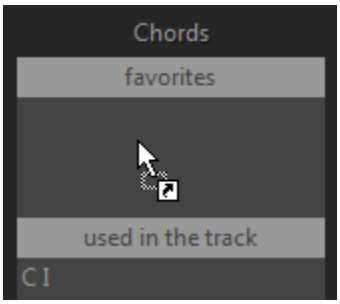
IMPORTING CHORDS FROM THE WEB PAGE

Find chords/lyrics content of the needed song on any site, such as Ultimate Guitar http://www.ultimate-guitar.com, Chordie http://www.chordie.com, Heartwood Guitar Instruction http://www.heartwoodguitar.com, Guitar Chords and Lyrics http://www.guitarsongs.info to name a few.

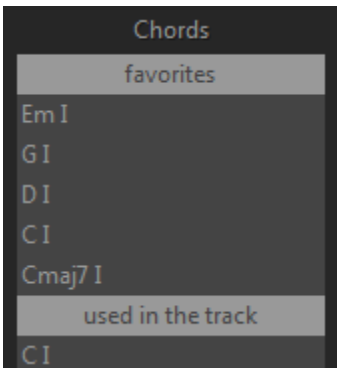
Select the text with a mouse,



drag and drop it directly into 'Favorites' section,

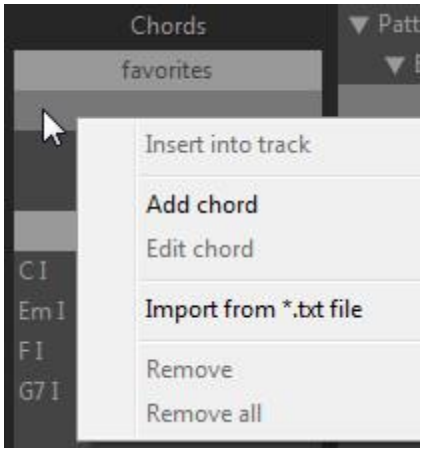


and instantly get ready to use chord set for your song!



IMPORTING THE CHORD SET FROM A TEXT DOCUMENT

You may simply drag ***.txt** file directly into 'Favorites' section, or alternatively right-click the section and select 'Import from *.txt file' item in popup menu, and then browse the needed file in the opened dialog.

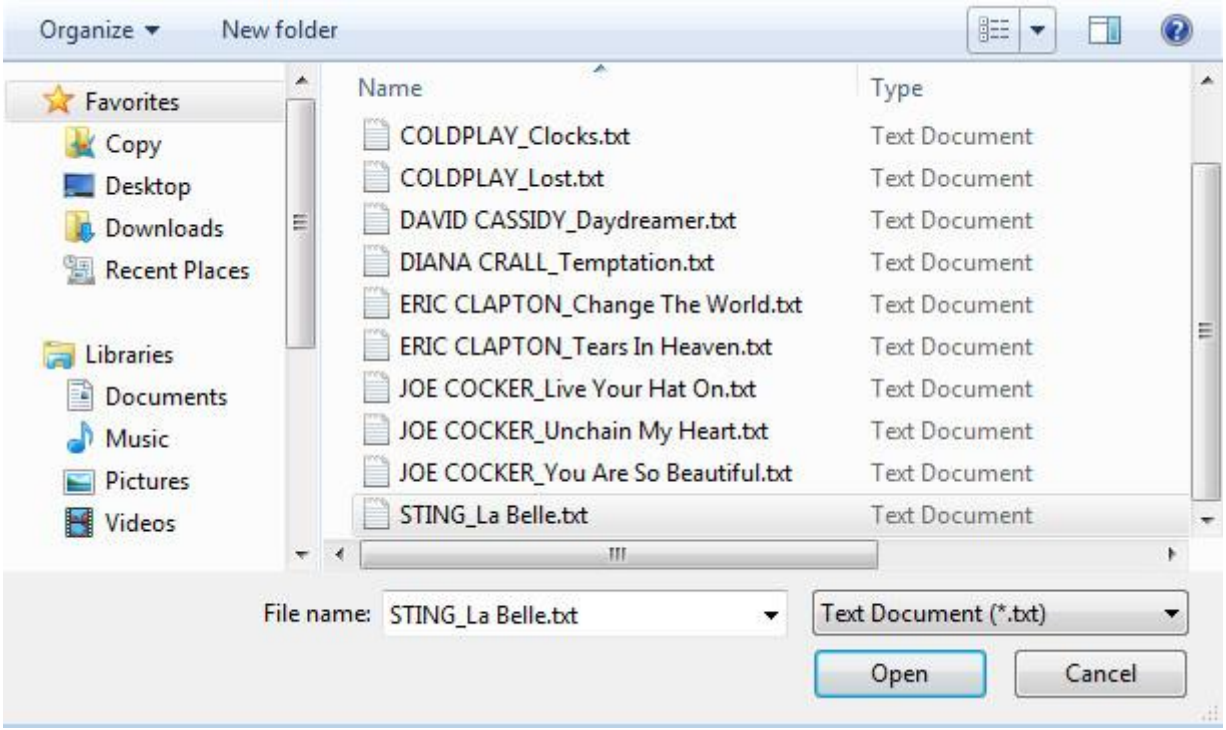


Example:

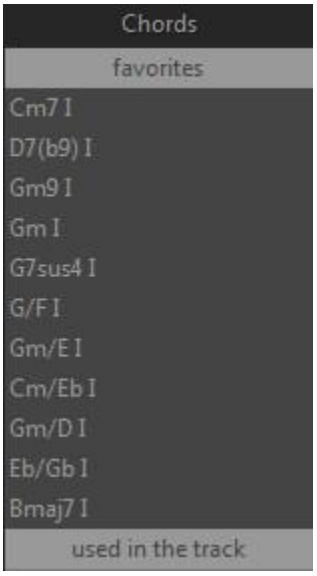
```
      La Belle Dame Sans Regrets

      Cm7     D7b9    Gm9     Gm
1. Dansons tu dis  et moi, je suis
   Ebmaj7       D7b9        G7sus    G/F
   Mes pas sont gauches mes pieds tu fauches
      Gm/E       Cm/Eb   Gm/D                Gm
   Je crains les sots je cherche en vain les mots
        Gm/E   Eb/Gb   Bmaj7 G7sus
   Pour m'expliquer ta vie   alors...
```

Import the Sting song lyrics/chords file.



Or simply drag and drop the file into the 'Favorites section and instantly get ready to use chord set:

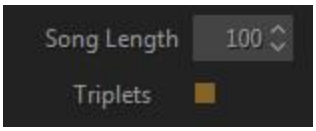


Once you insert chord into the Song track it will appear in 'Used in the track' section on the left side of Library window, which allows you to easily use it in other places of the song by dragging it directly from 'Used in the track' section.

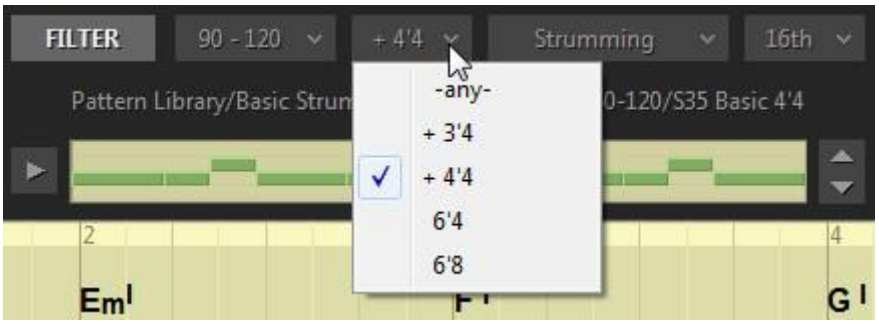
TIME LINE

Time line area allows you to navigate along the song with a mouse click or Left/Right Arrow keys, as well as start/stop playback with a double-click.

Right clicking on the time line will open settings panel, where you can set the number of measures you need for the song in Song Length numeric box, as well as set triplet beat division (grid) if needed for the track by activating Triplets LED.

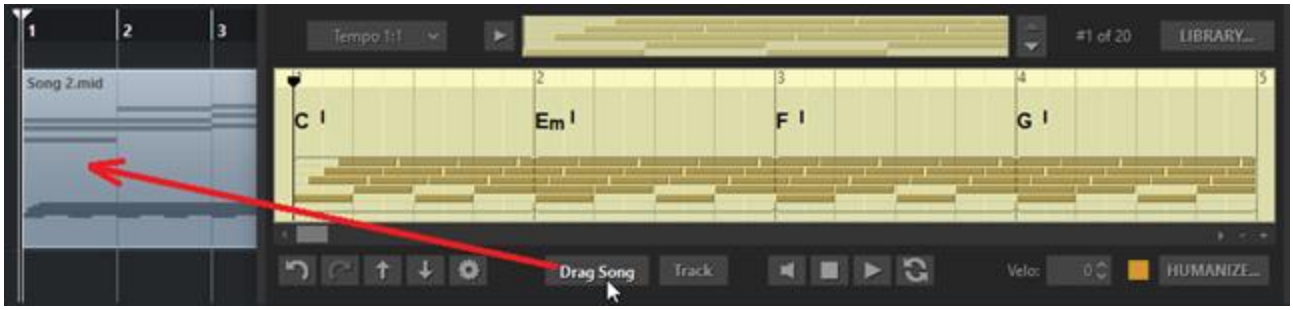


To change time signature display from the default 4/4 to any other available in the Library, click the Meter combo box of Filter section and select the needed item in the popup menu.

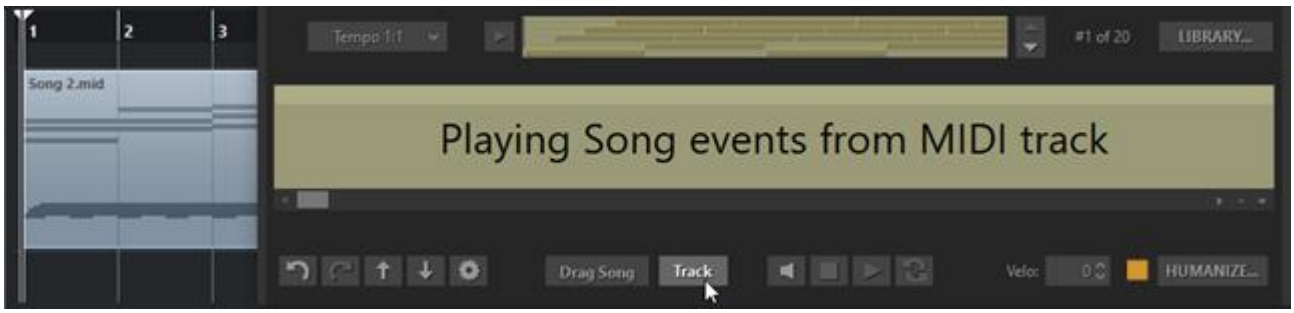


MOVING SONG EVENTS TO MIDI TRACK

When the song or its part is finished you can export it to your DAW's MIDI track, edit and play back it directly to Song mode window. To do that simply drag song events (chord and pattern tracks) from Drag Song button to MIDI track,



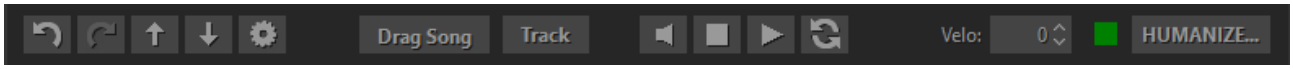
and activate Track button in the lower part of Song mode window.



Note, that with this scenario RealGMS is not synched with your DAW's time line, which allows you to put/copy and playback the dragged MIDI clip(s) at any place of your project.

CONTROLS

Below the Song track are various Edit, Transport, and Performance controls.

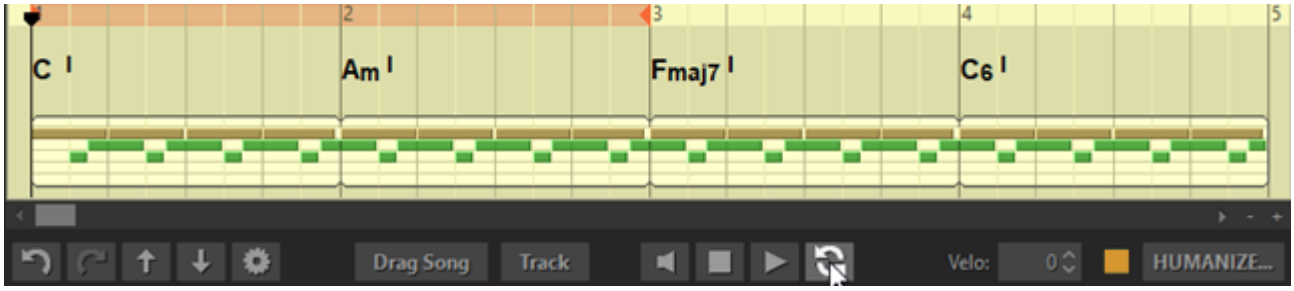


 **Play/Pause** - click to start/pause playback (alternatively press Space bar, or double-click Time line).

 **Stop** - click to stop playback and return to start position, second click will return to zero position.

 **Loop** - click to activate internal **Loop** in Song track.

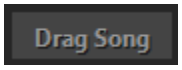
Set Left and Right locators for the Loop by dragging mouse cursor over the Time line.



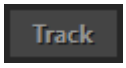
 Activate to **audition chord changes** on playback.

Add/Reduce output velocity (can be automated by MIDI CC#122).

Switch on/off the Humanize engine. Open Humanize settings window.

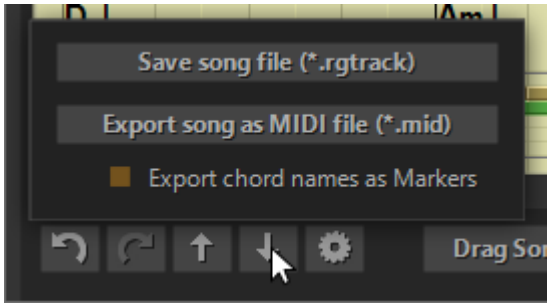


Drag out Song events (patterns and chords) to MIDI track.



Activate '**Play Song events from MIDI track**' mode.


Undo/Redo edits done in the Song Track.



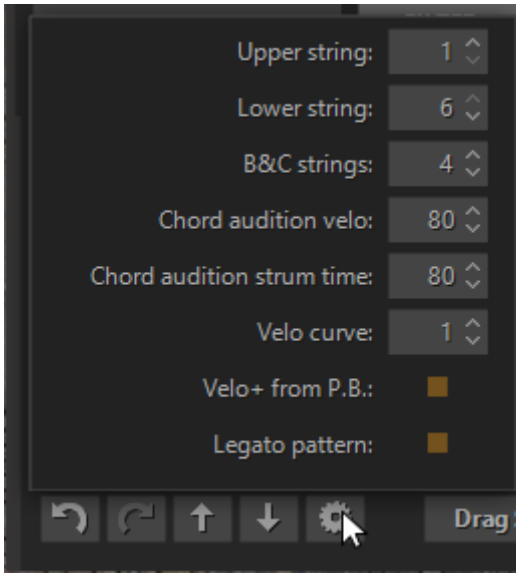
Save/Export the Song track.


Load the Song track (*.rgtrack file).


Open Settings panel.

SETTINGS PANEL

Clicking the Settings button will bring up the Settings panel.



Upper string - disables upper strings for strumming patterns.

Lower string - disables lower strings for strumming patterns.

B&C strings - specifies the number of sounding strings for Bass&Chord patterns.

Chord audition velo - specifies velocity value for chord audition.

Chord audition strum time - specifies strum time for chord audition.

Velo curve - select the output velocity curve.

Velo+ from P.B. - assign +/- velocity control to Pitch Bender controller.

Legato - click to allow the last note of shortened pattern continue sustaining its full length in the close next pattern.

KEYBOARD SHORTCUTS

SONG TRACK

COMMAND	SHORTCUT	MOUSE
Play/Pause	Spacebar	Double-click on Time line
Stop	Ctrl+Spacebar	
Navigate Track vertically	Up/Down arrows	
Navigate Track horiz. by beats	Left/Right arrows	
Navigate Track horiz. by grid	Ctrl+Left/Right arrows	
Navigate between chords	Left/Right arrows	

Navigate Chord track, beats	Tab, Shift+Tab	
Navigate Chord track, grid	Ctrl+Tab, Shift+Ctrl+Tab	
Select all chords and patterns	Ctrl+A	
Insert Strum	S	
Insert Slow Strum	Shift+S	
Find pattern in Library	Enter	Double-click Pattern
Open Pattern Properties	Ctrl+Enter	Right-click Pattern
Copy Pattern(s)	Ctrl+C/Ctrl+V	Ctrl+Drag
Move/Resize Pattern without grid		Alt+Drag
Add/reduce Pattern velocity	+/-	
Zoom in/out horizontally		Mouse Wheel
Open Track Properties	Ctrl+Enter	Right-click on Time line
Open Chord Properties	Ctrl+Enter	Right-click the Chord
Open Chord Selector	Enter	Double-click the Chord
Move Chord(s) without grid		Alt+Drag
Copy Chord(s)	Ctrl+C/Ctrl+V	Ctrl+Drag

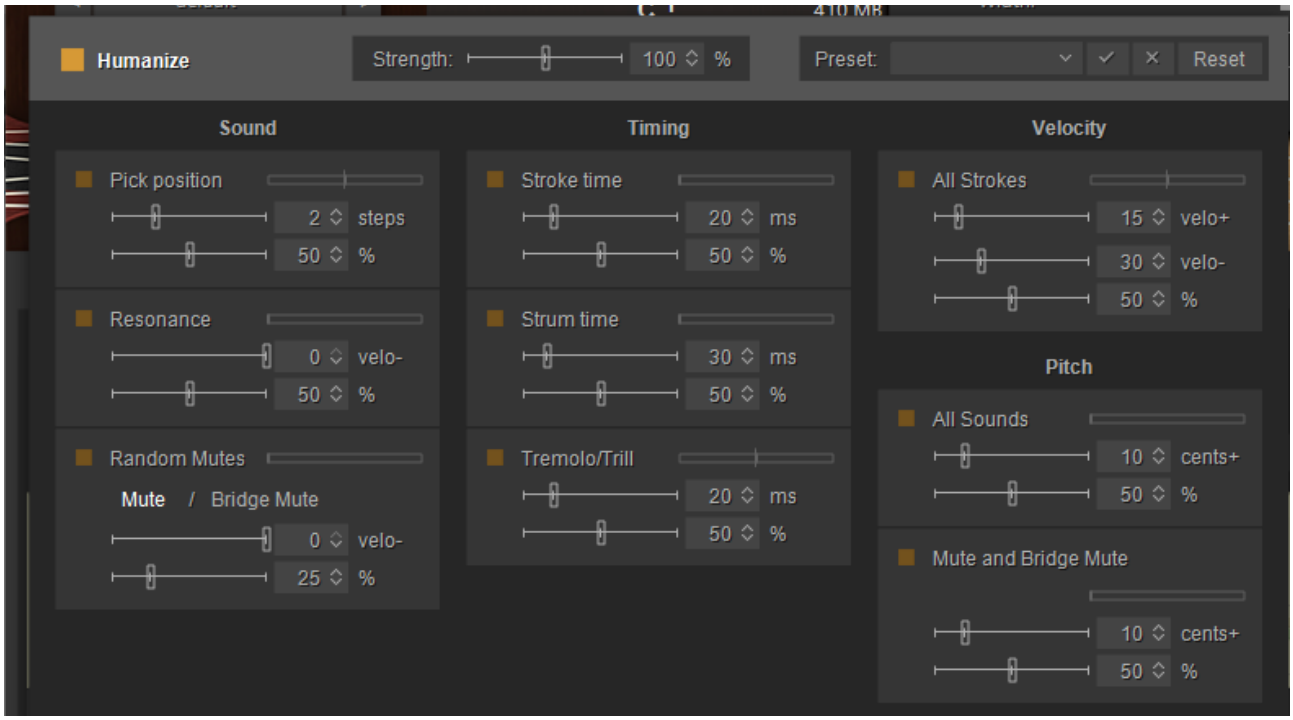
CHORD SELECTOR

COMMAND	SHORTCUT	MOUSE
Select major chord	C/D/E/F/G/A/B	
Select minor chord	C/D/E/F/G/A/B+M	
Select '#' chord	Shift+C/D/F/G/A	
Select 'b' chord	Ctrl+D/E/G/A/B	
Navigate through the circle	Arrow keys	
Insert chord	Enter	Click outside the circle
Cancel chord edits	Esc	
Transpose chord	+/-	
Change chord position	Ctrl+Plus (+)/Minus (-)	
Enharmonic shift (#/b)	*	
Change Key Center		Right-click Chord name

Note, Mac users should use CMD key instead of Ctrl.

HUMANIZE

You can easily add more realism to the performance (both live played or step-recorded, or automatic) using RealGMS advanced Humanize option.



Humanize panel

Click the Humanize button in the lower right corner of RealGMS window to open the Humanize panel. Activate the option by clicking on LED in the upper left corner (the LED is duplicated at the left of Humanize button, so you can switch it on/off even when Humanize panel is closed).

Humanize Panel has 9 parameters grouped under functional headings: Sound, Timing, Velocity, and Pitch. Each parameter has individual switch LED and two sliders. The upper slider controls the maximum range of parameter being applied (steps, milliseconds, velocity, cents), while the lower one controls the sensitivity of randomization in percentage (at 100% all playing notes will be affected).

SOUND

Pick Position - randomly changes Pick Position parameter value.

- Set maximum range with the ‘steps’ slider.

Resonance - randomly triggers open string adjacent to the current played (works for 5 upper strings). This simulates the effect of a guitarist accidentally striking or resonating strings.

- Reduce the volume of resonance sound with ‘velo-’ slider.

Random Mutes - randomly changes Sustain sound to Mute or Bridge Mute. This simulates the effect of a guitarist accidentally not pressing the string hard enough.

- Click on Mute or Bridge Mute name to select the sound.
- Reduce the volume of mute sound with ‘velo-’ slider.

TIMING

Stroke Time - randomly delays the note-on time of all playing notes.

- Set maximum value with 'ms' slider (0-100 msec. range)

Strum Time - changes the time window between simultaneously played notes (interval, chord).

- Set maximum value with 'ms' slider (0-200 msec. range)

Tremolo/Trill - randomizes automatic tremolo or trill notes timing.

- Set maximum value with 'ms' slider (0-100 msec. range)

VELOCITY

All Strokes - changes velocity values of all playing strokes.

PITCH

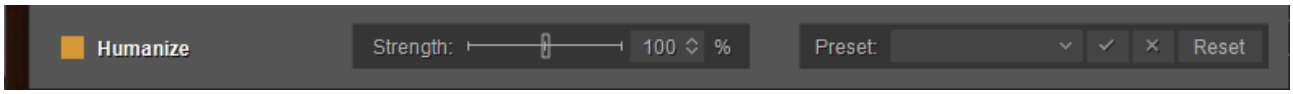
All Sounds - sharpens the pitch of all sounds.

- Set maximum value with 'cents' slider (0-50 cents range)

Mute and Bridge Mute - sharpens the pitch of Mute, Bridge Mute sounds.

- Set maximum value with 'cents' slider (0-50 cents range)

MASTER SECTION



Big LED - switch on or off the Humanize option.

Strength (Master) - add/reduce sensitivity for all parameters proportionally.

Preset - save all settings made in Humanize window as user presets for future use.

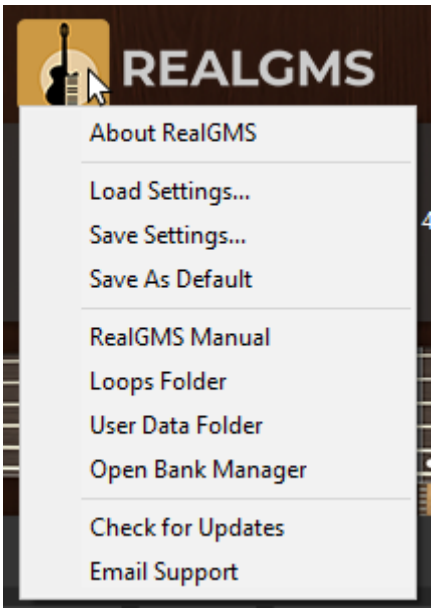
To create a preset, click on Preset combo box to activate Edit mode, type in the preset name, and press Enter on computer keyboard. Preset will be saved within RealGMS and added to preset list.

To delete preset simply click on Delete icon at the right.

Reset - click to reset all settings to factory default values.

IMPORTING/EXPORTING GLOBAL SETTINGS

You can save all modifications you've made to Global Preset (external *.rgsong file) containing overall settings, which allows to easily export all changed data as a single file and import it when needed. Click on MusicLab logo to save/load the Global Settings:



Note, all current settings are saved within a project doc of your DAW as well.

If you want the current settings load every time you run RealGMS, select 'Save As Default' item in the popup menu. To return factory default settings press Reset button in Setup panel and select 'Save As Default'.

APPENDIX A. NRPN MAP

Format: (<NRPN MSB>, <NRPN LSB>, <Data Entry MSB>[, <DataEntry LSB>]) - <Description>. {<Comment>.}

(0, key, msb, lsb) - Set Pitch Bend for the key to ((msb<<7) | lsb)-8192.

(1, key, fx) - Select FX for the key, sustain pedal or velocity of a stroke.

key - key id, see Key Map below.

fx-5 - fx id, see FX Map below.

(2, key, on) - Switch the key fx.

key - key id, see Key Map below.

on - 0/1 for Off/On.

(3, key, opt) - Set options of the key fx.

key - key id, see Key Map below.

opt - bit field: <toggle> | (<do sustain> << 1) | (<play stroke> << 2)

(4, key, msb, lsb) - Set first parameter of the key fx if any, ignored otherwise.

key - key id, see Key Map below.

((msb<<7) | lsb)-8192 - value of the parameter 1.

For specific parameter ranges and meanings see FX Map below.

(5, key, msb, lsb) - Set second parameter of the key fx if any, ignored otherwise.

key - key id, see Key Map below.

((msb<<7) | lsb)-8192 - value of the parameter 2.

For specific parameter ranges and meanings see FX Map below.

KEY MAP

Format: <key id> - <Description>. {<Comment>.}

Solo Mode key ids

0 - Sustain Pedal. Available fxes -5..59.

1 - Upper velocity zone. Available fxes 0..59.

2 - Lower velocity zone. Available fxes 0..59.

3..18 - C0..D#1 Key switches. Available fxes -2..59.

19..35 - C5..E6 Key Switches. Available fxes -2..59.

36 - Modulation. Available fxes -2..59.

Multi Mode key ids

40..55 - C0..D#1 Key switches. Available fxes -2..59.

56..72 - C5..E6 Key Switches. Available fxes -2..59.

FX MAP

Format: <fx id>, <name> [, <par1 range>[, <par2 range>] - <parameters' names>]

-2, velo upper
-1, velo lower
1, Mute
2, PalmMute, 0..128, 0..3 - ctrl val, velo sensitivity
3, Harmonics
5, Slap
6, Smacks
7, HammerOn(Legato), 0..48 - range
8, Slide(Legato), 0..48, 30..150 - range, time
10, Repeat(NoteOff)
11, ChuckaFull
12, ChuckaMuteKeys
13, Tremolo, 0..9 - duration id (see Duration Map)
14, Tremolo 1 beat, 0..9 - duration id (see Duration Map)
15, Trill, 1..12, 0..9 - interval, duration id (see Duration Map)
16, Trill 1 shot, 1..12, 0..9 - interval, duration id (see Duration Map)
17, SlideUp, 1..12, 40..500 - range, time (ms)
18, SlideUpTrig, 1..12, 40..500 - range, time (ms)
19, SlideDown, 1..12, 40..500 - range, time (ms)
20, SlideDownTrig, 1..12, 40..500 - range, time (ms)
21, Bend, 1..2, 100..800 - interval, time (ms)
22, ReverseBend, 1..2, 100..800 - interval, time (ms)
23, UnisonBend, 1..2, 100..800 - interval, time (ms)
25, Hold
26, Modulation
29, Interval, 0..8 - interval id (see Interval Map)
30, FretPosition, -1..20 - fret position id (see Fret Position Map)
31, PickPosition, -7..+7 - pickup position
34, ChuckaVeloLayer
35, VeloMute 1..127 - velocity
36, Legato
37, String 0..7 - 0..6 - string 1..7, 7 - auto
38, ChangeMode, 0..4 - Chord/Bass&Chord/Bass&Pick/Multi

39, FretNoise
40, Transpose, -3..+3 -12..+12 - octaves, semitones
41, TransposeToggle, -3..+3 -12..+12 - octaves, semitones
42, BuzzTrig,
43, BuzzVelo, 1..127 - velocity
44, SlapVelo, 1..127 - velocity
45, SlowStrum, 30..500- time (ms)
46, StopSlap,
47, StopStrum,
48, PullOff,
49, ChordPos, -1..8 - action/postion (see Chord Pos Map)
50, Melody, 0..2 - octave+ (Chords to Melody)
51, Chords, 0..2 - octave+ (Melody to Chords)
52, SlapTrig,
53, SmacksTrig, 0..2 - smacks sound group
54, Strings, 0..2 - string keys position preset
55, Bass,
57, MelHarmonics, 0..1 - octave+
58, MelodyOct, 0..4 - up/down/lo/med/hi
59, SoloMode,

DURATION MAP

Format: <duration id>, <description>
0, 4th
1, 4T
2, 8th
3, 8T
4, 16th
5, 16T
6, 32nd
7, 32T
8, 64th
9, 64T

INTERVAL MAP

Format: <interval id>, <description>

0, mono
1, 4th down
2, 5th up
3, Octave
4, Power
5, Power2
6, 2 Octaves
7, Pwr Oct
8, Pwr 2 Oct

FRET POSITION MAP

Format: <fret position id>, <description>
-1, D#5..C6
 0, Open
 1, Fret 1
 2, Fret 2
 3, Fret 3 *
 4, Fret 4
 5, Fret 5 *
 6, Fret 6
 7, Fret 7 *
 8, Fret 8
 9, Fret 9 *
10, Fret 10
11, Fret 11
12, Fret 12 * *
13, Fret 13
14, Fret 14
15, Fret 15 *
16, Fret 16
17, Fret 17 *
18, Fret 18
19, Fret 19 *

CHORD POSITION MAP

Format: <chord position id>, <description>

-1, Up

0, Down

1, I

2, II

3, III

4, IV

5, Kbd fix

6, Kbd fix I-II

7, Kbd fix I-III

8, Kbd fix I-IV

APPENDIX B. PARAMETER AUTOMATION MAP

REALGMS	MIDI CC #	VST NAME
OUTPUT		
Volume	7	Volume
EQ, High	29	EQ-High
EQ, Low	30	EQ-Low
MIDI Out, select		Outmode
TUNE		
Pitch, Coarse	12	PtchCrse
Pitch, Fine Tune	13	PtchFine
Modulation, Depth	14	ModDepth
Modulation, Freq	15	ModFreq
MIXER		
Mixer_Muted_sound, Volume	20	MxMuted
Mixer_Slow_Strum, Volume	21	MxSlStrm
Mixer_Switch_FX, Volume	22	MxKeyFx
Mixer_FretNoise, on/off,	23	MxFrtN_
Mixer_FretNoise, Volume	24	MxFrtNse
Mixer_ReleaseNoise, on/off	25	MxRelN_
Mixer_ReleaseNoise, Volume	26	MxRelNse
Mixer_Pick/Noise, on/off	27	MxPckN_
Mixer_Pick/Noise, Volume	28	MxPckNse
AUDIO FX		
FX_Tremolo, on/off	44	MxTremol
FX_Tremolo_Depth	45	TremDpth
FX_Tremolo_Freq	46	TremFreq
FX_Chorus, on/off	47	MxChorus
FX_Chorus_Level	48	ChLevel
FX_Chorus_Depth	49	ChDepth1
FX_Chorus_Freq	50	ChFreq1
FX_Chorus_Depth2	51	ChDepth2
COMMON		
Alter_sample, mode	52	AltSmple
Accent_velocity_Threshold	53	VelTrsh
Release_Time	55	RlseTime

Strum_Time	56	StrmTime
Pick_Position, select	43	PickPos
Fret_Position, select	78	FretPos
Auto_Fret_Position, on/off	79	AutoFret
Hold, on/off	64	Hold
Pickup, select	19	Pickup
CONTROLLERS		
Pitch_BenderUp, Mode	57	PBupMode
Pitch_BenderDown, Mode	48	PBdnMode
PBenderUp_to_Slide, Range	58	PBSldRng
PBenderDown_to_Slide, Range	63	PBdnSlRn
PBender_to_Pitch, Range	59	PBPtcRng
Modulation_Wheel, Mode	60	WhMode
ModWheel_to_Slide, Range	61	WhSldRng
ModWheel_to_Pitch, Range	62	WhPtcRng
Aftertouch, Mode	75	AtchMode
Aftertouch_to_Pitch, Range	76	AtchRng
Velocity_Curve, select	77	VelCurve
VELOCITY SWITCH FX (NON-SOLO)		
Velo_Switch_Slide_mode, select	85	VelSlide
VelSw_SlideUp, Velo	86	SldUpVel
VelSw_SlideUp, Steps	87	SldUpStp
VelSw_SlideUp, Time	88	SldUpTim
VelSw_SlideDown, Velo	89	SldDnVel
VelSw_SlideDown, Steps	90	SldDnStp
VelSw_SlideDown, Time	102	SldDnTim
Slow_Strum_on_high_velo, select	112	SlStrmHi
Slow_Strum_HighVel, Velo	113	SlStrHVe
Slow_Strum_HighVel, Speed	114	SlStrHSp
Slow_Strum_on_low_velo, select	115	SlStrLow
Slow_Strum_LowVel, Velo	116	SlStrLVe
Slow_Strum_LowVel, Speed	117	SlStrLSp
MODE CONTROLS		
Performance_Mode, select	54	Mode
Silent Mode, on/off	110	Silent
Chord Position, select	111	ChordPos
Chords/Bass, on/off	80	ChrdBass
Alter_Bass, on/off	118	ChdAltBs
Bass_Mono, on/off	119	ChdMnoBs

Chords_Strings, Upper, select	6	ChdStrU
Chords_Strings, Lower, select	3	ChdStrL
Bass&Chord_mode_Strings#, select	9	BnCStr#
Harmony_Mode_Interval, select	31	HrmIntr1
Solo_FX_HammerOn, select	35	SolFxHO
Solo_FX_HammerOn, Steps	36	HOSteps
Solo_Legato, on/off	18	Legato
Solo_BassZone, on/off	40	BassZone
Solo_BassZone, rangeHigh	41	BasRngUp
Slow Strum time zone (Pattern)	120	Slowzone
Pattern mode on/off	16	PattrnOn
Pattern, Track mode on/off	17	TrackMod
Song, pattern velo+	122	SongVelo

MIDI CC AUTOMATION, VALUE TO PARAMETER MAP

CC#3, ChdStrL	
0-13	--> 1
13-38	--> 2
39-63	--> 3
64-88	--> 4
89-114	--> 5
115-127	--> 6

CC#6, ChdStrU	
0-13	--> 1
13-38	--> 2
39-63	--> 3
64-88	--> 4
89-114	--> 5
115-127	--> 6

CC#9, BnCStr#	
0-21	--> 2
22-63	--> 3
64-105	--> 4
106-127	--> 5

CC#31, HrmIntrl	
0-9	--> 4th down
10-27	--> 5th up
28-45	--> Octave
46-63	--> Power1
64-81	--> Power2
82-127	--> 2 Octave

CC#19, Pickup	
0-20	--> Piezo
21-41	--> Piezo+Magnetic
42-62	--> Magnetic
63-83	--> Piezo+Synth
84-104	--> Mag+Synth
105-127	--> All

CC#36, HOSteps	
0-5	--> 1
6-17	--> 2
18-28	--> 3
29-40	--> 4
41-51	--> 5
52-63	--> 6
64-75	--> 7
76-86	--> 8
87-98	--> 9
99-109	--> 10
110-121	--> 11
122-127	--> 12

CC#48, PBdnMode	
0-10	--> As up
11-31	--> Off
32-52	--> Slide
53-74	--> Pitch
75-95	--> VeloAdd
96-116	--> MonoBend
117-127	--> Sustainer

CC#12, PtchCrse	
0-2	--> -12
3-7	--> -11
8-13	--> -10
14-18	--> -9
19-23	--> -8
24-29	--> -7
30-34	--> -6
35-39	--> -5
40-44	--> -4
45-50	--> -3
51-55	--> -2
56-60	--> -1
61-66	--> 0
67-71	--> 1
72-76	--> 2
77-82	--> 3
83-87	--> 4
88-92	--> 5
93-97	--> 6
98-103	--> 7
104-108	--> 8
109-113	--> 9
114-119	--> 10
120-124	--> 11
125-127	--> 12

CC#13, PtchFine	
64-127	--> 0-(+100c)
64	--> 0
0-64	--> 0-(-100c)

CC#46, WahMode	
0-22	--> MidiCC
23-63	--> Auto(Pos)
64-86	--> Auto(Neg)
87-127	--> Modulation

CC#52, AltSmple	
0-15	--> 1
16-47	--> 2
48-79	--> 3
80-111	--> 4
112-127	--> 5

CC#58, PBSldRng	
0-5	--> 1
6-17	--> 2
18-28	--> 3
29-40	--> 4
41-51	--> 5
52-63	--> 6
64-75	--> 7
76-86	--> 8
87-98	--> 9
99-109	--> 10
110-121	--> 11

CC#41, BassRang	
0-1	--> E1
2-5	--> F1
6-8	--> F#1
9-12	--> G1
13-15	--> G#1
16-19	--> A1
20-22	--> A#1
23-26	--> B1
27-29	--> C2
30-33	--> C#2
34-37	--> D2
38-40	--> D#2
41-44	--> E2
45-47	--> F2
48-51	--> F#2
52-54	--> G2
55-58	--> G#2
59-61	--> A2
62-65	--> A#2
66-68	--> B2
69-72	--> C3
73-75	--> C#3
76-79	--> D3
80-82	--> D#3
83-86	--> E3
87-89	--> F3
90-93	--> F#3
94-97	--> G3
98-100	--> G#3
101-104	--> A3
105-107	--> A#
108-111	--> B3
112-114	--> C4
115-118	--> C#4
119-121	--> D4
122-125	--> D#4
126-127	--> E4

CC#60, WhMode	
0-15	--> Off
16-47	--> Slide
48-79	--> Pitch
80-111	--> Modulation
112-127	--> MonoBend

CC#62, WhPtcRng	
0-4	--> 12
5-13	--> 11
14-22	--> 10
23-31	--> 9
32-40	--> 8

CC#50, PickPos	
0-4	--> -7
5-13	--> -6
14-22	--> -5
23-31	--> -4
32-40	--> -3
41-49	--> -2
50-58	--> -1
59-68	--> 0
69-77	--> 1
78-86	--> 2
87-95	--> 3
96-104	--> 4
105-113	--> 5
114-122	--> 6
123-127	--> 7

CC#54, Mode	
0-13	--> Solo
14-38	--> Harmony
39-63	--> Chords
64-88	--> BassChord
89-115	--> BassPick
116-127	--> Direct

CC#57, PBupMode	
0-12	--> Off
13-38	--> Slide
39-63	--> Pitch
64-88	--> VeloAdd
89-114	--> MonoBend
115-127	--> Sustainer

CC#78, FretPos	
0-3	--> 0
4-10	--> 1
11-17	--> 2
18-24	--> 3
25-31	--> 4
32-38	--> 5
39-45	--> 6
46-52	--> 7
53-59	--> 8
60-67	--> 9
68-74	--> 10
75-81	--> 11
82-88	--> 12
89-95	--> 13
96-102	--> 14
103-109	--> 15
110-116	--> 16
117-123	--> 17
124-127	--> 18

122-127 --> 12

CC#59, PBPtcRng	
0-4	--> 12
5-13	--> 11
14-22	--> 10
23-31	--> 9
32-40	--> 8
41-49	--> 7
50-58	--> 6
59-68	--> 5
69-77	--> 4
78-86	--> 3
	4 --> 2
96-104	--> 1
105-113	--> 1/2
114-122	--> 1/4
123-127	--> 1/8

CC#61, WhSldRng	
0-5	--> 1
	Chords --> 2
18-28	--> 3
29-40	--> 4
41-51	--> 5
52-63	--> 6
64-75	--> 7
76-86	--> 8
87-98	--> 9
99-109	--> 10
110-121	--> 11
122-127	--> 12

CC#85, VelSlide	
0-31	--> off
32-95	--> up
96-127	--> down

CC#87, SldUpStp	
0-5	--> 1
6-17	--> 2
18-28	--> 3
29-40	--> 4
41-51	--> 5
52-63	--> 6
64-75	--> 7
76-86	--> 8
87-98	--> 9
99-109	--> 10
110-121	--> 11
122-127	--> 12

41-49 --> 7
50-58 --> 6
59-68 --> 5
69-77 --> 4
78-86 --> 3
87-95 --> 2
96-104 --> 1
105-113 --> 1/2
114-122 --> 1/4
123-127 --> 1/8

CC#75, AtchMode	
0-15	--> Off
16-47	--> Pitch
48-79	--> Modulation
80-111	--> Sustainer
112-127	--> Feedbacker

CC#76, AtchRng	
0-15	--> 2
16-47	--> 1
48-79	--> 1/2
80-11	--> 1/4
112-127	--> 1/8

CC#77, VelCurve	
0-21	--> 1
22-63	--> 2
64-105	--> 3
106-127	--> 4

CC#90, SldDnStp	
0-5	--> 1
6-17	--> 2
18-28	--> 3
29-40	--> 4
41-51	--> 5
52-63	--> 6
64-75	--> 7
76-86	--> 8
87-98	--> 9
99-109	--> 10
110-121	--> 11
122-127	--> 12

CC#111, ChordPos	
0-15	--> I
16-47	--> II
48-79	--> III
80-111	--> IV
112-127	--> Kbrd

CONTACTING MUSICLAB

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