FieldScaper - Field recorder & Scapes constructor ver. 2.0

About

FieldScaper is an advanced field recorder combined with a sound warp engine and a collection of ready to use dynamic presets for iPad and iPhone. With this application you discover new ways to create and construct unusual and exciting ambient textures from any environmental sounds, noises or samples recorded from other applications through Inter-App audio or Audiobus or even from sounds taken from external input and processed in real time.

The FieldScaper consists of two main parts. The first part is the field recorder special designed for different ways of recording the environmental sounds and noises from microphone or recording other sound sources. With the sample editor feature you can change the source sample for more convenient use.

The second part is the scaper sound engine that with using the dynamic presets can easily transform the most ordinary samples into something absolutely different. These parts connect with each other into one whole machine, but you can use recorder or scaper separately.

The scaper sound engine contains three sample-based oscillators each with own sections of distortion, filters, delay and a spatial mixer. Most of parameters can be assigned to individual low-frequency oscillators (LFO). You can control several these parameters at once in different ranges using the "**Main effect**" fader. These features give you abilty to create continuously changing, breaking and glitching sound forms and loop-based effects from ordinary samples of synths, guitars, voices or everyday sounds of your environment.

FieldScaper supports complete MIDI control for all faders, knobs and many buttons. You can change the parameters of oscillators, filters, delays and mixer by using any external MIDI controller or MIDI applications like sequencers. With the MIDI controllers this application becomes very comfortable to use at live performance.

With using Ableton Link you can synchronize BPM and start / stop of oscillators, recorder and looper with other applications which also have Ableton Link feature.

Adaptive User Interface

FieldScaper has different user interface for iPhone / iPad in portrait and landscape orientation. In portrait orientation the screen is divided between Recorder and Oscillator controls. You can easily record new sample and immediately load and process it in the oscillator.

For more convenient use of this application as field recorder on iPhone just rotate it to landscape orientation. This transforms the user interface into full screen recorder without oscillator. This mode is very useful for recording and editing samples on iPhone.

On iPad in landscape orientation on the screen placed the Recorder and controls for all three Oscillators. This mode is suitable for recording and operating with samples when you use FieldScaper in real-time as instrument with all three oscillators, especially with MIDI controllers.

In addition you can switch the user interface to the "**Looper**" mode. This mode is specially designed for use FieldScaper as real-time effect processor and looper. All controls are made so that you can quickly change presets and samples, use the main controls for oscillators and select the mode for processing the input signal.

Easy access to samples and records

The FieldScaper has different ways to access audio files that contain in this application. These files can be samples which use for oscillators or files that were recorded in FieldScaper.

One of the easiest way is to use the application Files (starting with iOS 11) that can provides you access to files in other applications (if the application grants access to own files) or storage cloud service. With this application you can copy samples to FieldScaper from any other appllications or copy records from FieldScaper to other applications and cloud services.

You can copy files from FieldScaper to desktop computer by using iTunes file sharing, copy files thru usual web browser in local WiFi network or using Dropbox service directly from FieldScaper.

FieldScaper supports copy files to other applications with option "**Open in**" and supports operations "**Copy**" and "**Paste**" with audio clipboard. You can use option "**Open in**" from another application to copy files in FieldScaper.

Also you can pack scene and all files and presets which uses in this scene to single file that you can copy to another device and then unpack it or use this file for backup.

How it works

The beginning of this application is the recorder. The recorder writes signal from the microphone or other input sources to the file and at the same time writes this signal to the current oscillator. While in this mode the scaper engine is not running. When the recorder stops (The "**Record**" button starts and stops recorder) the scaper can be started immediately (when "**Scaper start**" mode is "**auto**") for playback and process recorded sample. The scaper will not start automatically when the "**Scaper start**" mode is "**manual**". In this mode you can just record the samples for future use or start scaper manually by button "**Start**" on the scaper control panel.

>>> More about "Recorder controls"

*Tip: The button "**Play file**" will start playback the source sample without any processing.*

The "**Looper**" mode (see button "**Looper**" on the main screen) designed for use FieldScaper as real-time sound mangler and looper. In this mode recorder does not write the file but writes the signal directly to the current oscillator. Scaper starts together with the recorder and process the recorded signal at the same time. In this mode input signal will record and playback in a continuous loop. The length (time) of the loop can be specified in the panel "**Record and loop time**". This panel opens by tapping on the timers area.

>>> More about "Looper mode"

*Please note: The oscillator gives the better processing results when the current sample is normalized or even slightly compressed. When a sample is loaded into the oscillator it is automatically normalized. But when you record signal directly to the oscillator (when the "**Scaper start**" in "**auto**" or "**loop**" mode) you should monitor the input signal level so it is at maximum (or even more) by using the "**Input amplify**" faders or "**Automatic gain control**". Limiter on the input will prevent any clipping when you amplify the input signal. But avoid the maximum increase the output signal from external sources which clip before limiting.*

The FieldScaper contains three sample-based oscillators that continuously playback recorded samples (you can also upload any other samples by different ways). Changing the oscillator configuration can give a many different variations of the same sample. Each oscillator is connected to a filter. You can select one of three type of filters - low-pass (LPF), high-pass (HPF) or band-pass (BPF). Each oscillator also has individual delay module. After filtering you can connect (or not connect) the delay module. In the final the signal from oscillators (after filter and delay) is sent to the spatial mixer. This mixer combined with reverb and differs from the usual ones in that it has control of side and distance for sound sources instead of volume level and panorama. Side is similar to the panorama control and volume level you can change in the oscillator control (fader "**Output level**").

*Please note: Each scaper oscillator starts independently by button "**Start**" on scaper control panel. LED marker on this button indicates that the current oscillator is started. Button "**All**" can start or stop all oscillators together. Flashing LED on this button indicates that not all oscillators are running. While one oscillator is running you can switch to other oscillator and play file (without processing) assigned to this oscillator by button "**Play file**" or you can start recording for this oscillator by button "**Record**".*

>>> More about "Scaper main controls"

In the scaper oscillator control panel you can select a dynamic preset for each oscillator and change preset percentage by the "**Main effect**" fader. Oscillator and filter parameters are available by selecting the "**Oscillator**" and "**Filter**" buttons below the scaper control panel.

>>> More about "Presets"

You can use FieldScaper with Audiobus as sound source or filter (when recording in the loop mode) or with any other applications through Inter-App audio connection.

Please note: When using this application with Audiobus it is recommended to set the "Latency Control" in Audiobus settings at least on 256 frames to avoid stuttering at playback. When you use this application together with other high loading audio applications or on previous generation devices you may need to set latency on 512 or even more frames.

Main (processed) output can be recorded within this application by using option "**Internal recorder**" (button "**R**" at the bottom of the main screen).

>>> More about "Recorder controls"

A few basic ways to use FieldScaper

At the first start of FieldScaper when "**Scaper start**" mode is "**auto**" use the internal microphone to record any sound or just say something (check the level, it should be high enough). Start recording by the "**Record**" button then stop. Scaper will start playback automatically. Change the presets in the scaper control panel and use the "**Main effect**" fader to change the shape of effect.

*Please note: The "**Record start**" and "**Record stop**" modes should be set to "**manual**".*

In this mode all recorded files will be available through "**File manager**". To open the panel of "**File manager**" tap on file name area on the main screen.

*Tip: To change the input amplification or set the automatic gain control or apply input filters use the "**Audio input controls**" button which is located between record and scaper panels on the main screen.*

Constructing scapes from samples

Use uploaded samples for oscillators. For that tap on the file name area (at the top of main screen, right after title) to open "**File manager**" panel. In this panel tap two times on the button "**...**" to change list of function buttons. Tap the button "**Web access**" to start internal web service that allows you upload samples to application. Also with this application you can use access to Dropbox service for download and upload samples.

All uploaded files are available in "**File manager**". Tap the button "**All**" at the top of "**File manager**" panel. In the file list select the sample file and load it to the current oscillator by use button "**Set osc**". You will see the sample which was downloaded to the current oscillator in the sample view (waveform) area. The same way you can set samples for all three oscillators.

Start one or all three oscillators by button "**Start**" on the scaper control panel. Button "**All**" starts all oscillators at once. Next select the preset (by scrolling up or down the presets list). After the preset was selected you can move the fader "**Main effect**" to modifying sound of this preset.

Try one more way to changing the sound of samples. When you use presets that well blur the original sound of sample you can select part of sample by using marks "In" and "Out" (buttons "**In**" and "**Out**") on the waveform panel. Set these marks before you start oscillators. Next you can use mode "Link" (button "**L off**" / "**L on**" on waveform) for moving "In" / "Out" marks together through the sample. It gives more interesting variations of sounding.

Tip: You can upload samples thru audio clipboard from another application. If other application supports audio clipboard you can copy whole file or part of file into clipboard and paste this part as new file in the "File manager".

Real-time input processing

You can use FieldScaper as real-time sound mangler and looper for any external audio sources (such as synth, guitar or voice) or other audio applications through Inter-App audio connection or Audiobus. For more convenient use this application switch to the "**Looper**" mode. For this tap the button "**Looper**" on the main. For return to the main screen tap the button "**Scaper**".

In the "**Looper**" mode tap the button "**Effect**" to process external input in real-time. Make sure that the input signal level is sufficient. Start the looper by the button "**Start**" (below the timers area). You will hear sound from input source (use headphones to avoid feedback if you use microphone for recording). Change the preset by the one of predefined buttons below control buttons and use the fader "**Main effect**" to change the preset sounding. In the "**Effect**" mode previous recording in the loop will be overwritten by the new.

Tip: If you want to change the loop length (time) tap on any timers area on the main screen (above the control buttons). This opens a panel where you can change recording time.

Use as autostart looper

When you in the mode "**Looper**" tap the button "**Loop A**" to set autostart looper mode. Start the looper by the button "**Start**" (below the timers area) if it not started yet. Record will start at beginning of the loop every time when input signal appears and stop at the end of loop. Recorder will ready to start again only when input signal falls below the threshold. After stop record the oscillator will continue playback and process this loop. You can select the preset and change other parameters to get another sounding of this loop. The input signal threshold for start record is accessible thru the panel "**Audio input controls**" (see button "**Input**" in the "**Looper**" mode).

One more interesting real-time processing effect can be reached by using mode "**Overdub**" when the "**Looper**" panel is active. In this mode the input signal will be recorded in the loop when it exceed specified threshold and stop when below. But in this mode the signal that already recorded to the loop do not erased. So you can overdub only part of loop. It can be very interesting for experimentation especially with some mangled sound presets.

*Please note: If you use FieldScaper as real-time effect with only one active oscillator (or just you need only one oscillator) you can set the "**Single oscillator mode**" in the application settings (button "**Settings**" on the main*

screen). This significantly reduces the CPU load and it allows to run more applications (or use more cpu intensive applications).

Create your own preset

You can easily create your own presets. For that find the preset which is more suitable for your idea. You can change any preset parameters on the panels that open by buttons "**Oscillator**" and "**Filter**". Also use buttons "**lfo**" above the faders to change the LFO settings assigned for specific parameter.

After changing parameters of the current preset in scaper control panel on the main screen tap the button at the top right in presets list to open the presets control panel. In this panel use button "**New**" to create new preset with all of current parameters of oscillator and filter. The new preset will have default name. You can rename current preset by button "**Rename**".

Main screen

At the very top of the main screen there are several indicators of the current state: Input and Output devices, Noise gate state, Audio input parameters (only for iPad) and Internal recorder time meter. The far right of the screen shows free disk space and battery level.

>>> More about "Audio input controls"

Below the Input, Output and Gate show the name of the current oscillator file. At the right on this area there is button to open "**File manager**" panel. On iPad in landscape orientation there are buttons "**Files**", "**Scenes**", "**Settings**", "**Internal recorder**" and "**Help**".

>>> More about "File manager", "Recorder controls"

Below the file name area is the level meter and limiter meter. These meters indicate the input signal level or playback level or scaper output level when it is running.

Below the level meters (to the right of the meters on iPad landscape) is the timers area. Tap on any meter in this area to open the "**Record and loop time**" panel.

Near at **BPM** value there is mark indicates sync source: "**i**" - Internal (no external sync), "**m1**" - External MIDI main, "**m2**" - External MIDI alter, "**ia**" - Inter-App Audio host, "**al**" - Ableton Link session.

>>> More about "Record and loop time"

Next is the sample view (waveform) area, record control buttons and record mode buttons. These panels are the recorder interface (recorder panels). On iPad in the landscape orientation placement of these panels is a little different but their functions remain the same.

>>> More about "Recorder controls"

Right after recorder panel is placed the oscillator main control panel. The oscillator is a part of scaper engine. Scaper engine consists three oscillators and three filters associated with them. Current oscillator for control you can select by buttons "**Oscillator 1**", "**Oscillator 2**" and "**Oscillator 3**" in this panel.

>>> More about "Scaper main controls"

Below this panel there are buttons "**Oscillator**" and "**Filter**" which open the panels contain all controls of oscillator and filter.

On iPad in the landscape orientation all three main control panels of oscillators are placed below the recorder area. Tap on the title of this panel to set the current oscillator.

Button "**M**" on the title sets and indicates the mute mode for this oscillator.

Recorder controls

The recorder can be used together with scaper or independently. The three buttons below sample view ("**Record**", "**Play file**", "**Delete file**") are intended for the main recording control. The next five buttons set the recorder work modes such as start and stop recorder and scaper, input monitor mode and others. All recorded samples accessed through "**File manager**".

>>> More about "File manager"

New sample recordings are always recorded in the current oscillator (see buttons "**Oscillator 1**", "**Oscillator 2**" and "**Oscillator 3**" on the scaper control panel). Make sure you select the oscillator you want to record in before you start the recording. The oscillator cannot be changed after recording has started.

>>> More about "Scaper main controls"

You can rotate iPhone to landscape orientation for switch the user interface into full-screen recorder mode. This mode specially designed for convenient use this application as field recorder and sample editor.

Record control buttons

"**Record**" - Start / Stop recording.

In depends on "**Record start**" mode this button starts recording immediately ("**Record start - manual**") or when input signal level exceed threshold ("**Record start - signal / repeat**"). Threshold of input signal level can be set on the "**Audio input controls**" panel. In the waiting mode the LED marker on "Record" button will flashing.

>>> More about "Audio input controls"

Record start can be synced with other applications with Ableton Link. For this you need set the mode "**Record stat - manual**" and enable Ableton Link. Record will start at the first beat. During wait of the first beat title of the button "**Record**" will replace to "**SYNC**".

When you stop record manually the recording stops immediately when the timer is set to the "**Seconds**" mode (timer mode can be set on the "**Record and loop time**" panel). When the recording timer is set to the "**Measures**" mode the record will stop at the end of current (completed) measure. In this mode recorded sample will have complete measures.

>>> More about "Record and loop time"

If the "**Scaper start**" mode is set to "**auto**" the current scaper oscillator will starts right after stopping the recording.

*Tip: If you need to record the sample without starting the scaper, set the "**Scaper start**" to "**manual**" mode. If you want control the recording start and stop time manually, set the "**Record start**" and "**Record stop**" to "**manual**" mode.*

>>> More about "Scaper main controls"

"**Play file**" - Start / Stop playback of the current sample without processing.

This button starts playback recorded sample or the sample which was loaded to the current oscillator. When start playback the recorder and the current scaper oscillator will be stopped (but not others).

The LED marker on this button indicates playback of file that was loaded (or recorded) in the current oscillator. Flashing marker indicates that file in any other oscillators is playing (but not in the current).

"**Delete file**" - Delete the current sample. This operation deletes both the recorded and current loaded sample. After delete the current oscillator will not have the loaded sample. You also can delete the sample later in the file manager.

Tip: Use this operation always when you unhappy with the recorded sample (it will save your disk space).

Record mode buttons

"**Audio input controls**" - This button opens the "**Audio input control**" panel.

In this panel you can set input channels, filter and amplification of input signal, noise gate and thresholds for start and stop recording.

>>> More about "Audio input controls"

Next five buttons are intended to set the recorder work modes. You can change the mode by tapping the button repeatedly.

"**Monitor**" - Button sets the input monitor mode.

Mode "**off**" - Input signal do not pass to the output.

Mode "**on**" - Input signal pass to the output in the same form as it will be recorded. Ie after filter, noise gate and amplification (attenuation). When the scaper or playback started the monitor will be disabled.

Mode "**thru**" - Input signal pass to the output directly from input without processing. In this mode the monitor always is on. Even when playback or scaper active. This mode can be used for mixing source input signal from instrument or other application with the processed output when this application is used as real-time insert effect.

*Tip: You can use the fader "**Monitor amplify / attenuate**" in the "**Audio input controls**" panel to adjust monitor volume level. This fader affects to the monitor level in any mode.*

"**Record start**" - Button sets the recorder start mode.

Mode "**manual**" - Recorder starts by the "**Record**" button.

Mode "**signal**" - Recorder starts one time when input signal exceed specified threshold. Button "**Record**" activates this mode. Threshold can be adjusted in the "**Audio input controls**" panel (see fader "**Start record threshold**").

Mode "**repeat**" - The same mode as "**signal**" but recorder will start each time when input signal exceeded threshold, of course after stopping before. Recorder can be stopped manually or by time or by silence and will be started again when input signal exceed threshold.

Please note: At each start recording the new file will be created. Frequent automatic start/stop can create a lot of files.

"**Record stop**" - Button sets the recorder stop mode.

Mode "**manual**" - Recorder stops by the "**Record**" button.

Mode "**timer**" - Recorder will stop after the time defined in the "**Record and loop time**" panel. The recording time can be defined in the "**Seconds**" or "**Measures**". When the recording timer is set to the "**Measures**" mode the record always stops at the end of current (completed) measure.

Mode "**silence**" - Recorder will stop when the input signal falls below specified threshold. Threshold can be adjusted in the "**Audio input controls**" panel (see fader "**Stop record threshold**").

"**Scaper start**" - Button sets the scaper start mode.

Mode "**manual**" - Scaper starts manually by the button "**Scaper start**" (on the scaper panel). In this mode you can just recording samples without using scaper.

Mode "**auto**" - Scaper will start automatically when record stops. Record can be stopped manually ("**manual**" mode), by time ("**timer**" mode) or when input signal falls below threshold ("**silence**" mode).

Looper mode

Special mode "**Scaper start - loop**" designed for processing external audio sources in the real-time. In this mode the application can be used as effect processor or looper for variety of musical intruments connected to the audio input (on external audio interface or dock station) or for other applications through Inter-App audio or Audiobus.

In this mode the recorder and scaper are working at the same time. For recording defined a loop with specified time in seconds or measures (see "**Record and loop time**" panel). The scaper processes the signal in this loop at the same time with recording. But speed and timing of reading from this loop by the scaper can be changed depending on the preset and this can creating totally unusual and exciting real-time effects.

You can use this mode directly on the main screen but more convenient switch the user interface to the "**Looper**" mode. Use the button "**Looper**" on the main screen to switch on this mode. For return to the main screen use the button "**Scaper**".

>>> More about "Looper mode"

Internal recorder

Besides main recorder the FieldScaper contains additional option of internal recorder that intended for recording from main output (that you hear in headphones and which sends to other applications thru IAA or Audiobus).

To start and stop internal recorder use button marked "**R**" on the bottom of main screen (at the top right on iPad in landscape orientation). The time counter of internal recorder placed at the top of the main screen.

All recorded files will be available in group "FieldScapes" in the file manager.

Sample view (waveform) controls

This panel shows waveform view of sample which was loaded or recorded in the current oscillator or sample at the recording time.

When you select the other oscillators you will see samples in them. Current oscillator can be selected by buttons "**Oscillator 1**", "**Oscillator 2**" and "**Oscillator 3**" on the scaper control panel.

>>> More about "Scaper main controls"

During playback you can change playback position (current time) by moving the time pointer on this panel. You can start playback by button "**Play file**" on the recorder control panel. Playback starts from the current time but scaper always starts from beginning of sample or from "In" mark position when it specified.

You can set the "In" and "Out" marks to select a part of sample. Only selected part will be used in scaper instead of whole sample. Also this part (or only "In" mark) is used for operations of editing the sample.

The top right button on waveform opens the top control panel (on iPhone) and bottom panel that contains sample editor operations. On iPad the top control panel always present.

With the buttons at the top control panel you can zoom the view of sample, set the "In" and "Out" marks, select the channel for view and define fade area with these marks.

When you use "**In**" and "**Out**" buttons the mark will set to current playback position (time). After this you can move the mark on waveform. When you tap the button "In" or "Out" first time the mark will set to the current playback position, the second tap set the mark to the beginning or the end of waveform. Also you can move the "In" and "Out" marks on the waveform.

*Tip: How to reset "In" / "Out" marks. Tap the button "**In**" (one or two times) and then "**Out**" to set the "In" mark to beginning and "Out" mark to the end of waveform. Set the fade buttons to the state "**F off**". Marks will be reset.*

"**Full**", "**-**", "**+**" - Full view, Zoom Out and Zoom In. You can scroll the waveform view when zoomed.

Please note: Not on all models of iPhone these buttons are present. You can use gestures for zoom operations.

"**Left**", "**Right**", "**Both**" - Select the channels for view.

"**In**" - Set the "In" mark to the current playback position (time). The second tap will set the mark to the beginning of waveform.

"**F off**", "**F lin**", "**F log**", "**F rev**" - Set the "Fade In" area. "**F off**" - fade area off. The states "**lin**", "**log**" and "**rev**" are define fade curves - linear, logarithmic and reversed logarithmic.

"**-**", "**+**" - Decrease and Increase the fade area.

"**Out**", "**F off**", "**F lin**", "**F log**", "**F rev**", "**-**", "**+**" - These buttons are set the "Out" mark and define "Fade Out" area.

Please note: On iPhone the names of these buttons are shortened.

"**L off**", "**L on**" - This option links the "In" and "Out" marks. When this mode is on ("**L on**") this fixes the time between marks and you can move these marks together.

Tip: Use "In" / "Out" marks and this option when sample used for oscillator to changing playback area in real time as very creative effect in addition to current preset.

"**Alg**" - This option aligns the "In" or "Out" mark to the whole number of measures in according with the current BPM (and you do not need to calculate the time and move the markers). Following tapping on this button will increase measures between marks.

"**Min**" - This option intended for search and marking points in sample with minimum level for more convenient cutting the sample on single parts.

First tap on this button will mark points and all of the following will move the time pointer between these marks. You can set "In" and "Out" markers on these points and perform the edit operations.

Please note: This operation is convenient for marking areas with sound and silence or marking the rhythmic areas but with dense samples this operation can not give the very accurate result.

At the bottom of waveform there are several parameters of the current view.

"**B:**" - Time of the beginning of current view.

"**Z:**" - Zoom factor.

"**I:**" - Time of the "In" mark.

"**O:**" - Time of the "Out" mark.

"**L:**" - Length of selected area between "In" and "Out" marks (shows only when marks specified).

"**T:**" - Total time of the sample.

The sample editor intended for simple changes in recorded or downloaded samples for more convenient use. You can delete unwanted part, create small fragment from longest sample, split and append the sample and apply fades. Almost all operations changes the source sample and you can not undo changes.

Please note: The new file with sample which will be created after operation will have the same name as the current file but with addition the time of "In" and "Out" marks in the name.

"**Undo**" - Undo last edit operation. All operations which change the sample make the backup of the original sample that can be restored by this operation.

Please note: This operation will performed even the changed sample is not loaded in the waveform editor.

"**Norm**" - This operation gives you possibility to apply the cut off filters and normalizer to whole sample or part of sample between "In" and "Out" mark.

Before this operation you may select low and high cut frequency and normalizer mode. When frequency is "off" the filter is not used.

When normalizer is set to "-0.5 db" or "+0.0 db" this defines the maximum level of the sample (by maximum peak of sample). In the modes "+1.0 db", "+2.0 db", "+4.0 db" the signal will be amplified to this level and limiter will be used to limit the level on 0 db. This increase the loudness of sample and aligns the overall level.

"**Delete**" - Delete the part between "In" and "Out" marks. The fade areas will be applied before the "In" and after the "Out" marks. Ie in the place of deleted part.

"**Trim**" - Trim the current sample before "In" and after "Out" mark. The fade areas will be applied to the current area between "In" and "Out" marks.

"**Split**" - Split the current sample into two. The mark "In" specifies the split position. You can set the fade area which will be applied to the end of the first part and at the beginning of the second part.

"**Cut**" - Cut the part between "In" and "Out" marks and move it to the audio clipboard. You can paste this part in the other sample or create the new file in "**File manager**" or paste it in any other applications.

The fade areas will be applied before and after the "In" mark and before and after the "Out" mark. Ie in the place of cutted part and on the cutted part in clipboard.

"**Copy**" - Copy the part between "In" and "Out" to the audio clipboard. You can paste this part in any possible way in this or other applications. The fade areas will be applied after "In" and before "Out" mark. For the copied part.

"**Paste**" - Paste the sample from audio clipboard in the "In" mark position. The fade area will be applied before and after the "In" mark and at the end of pasted part and on the beginning the rest of sample after pasted part.

"**Append**" - Append the part from audio clipboard at the end of current sample. The "In" and "Out" marks not used.

"**Save**" - Save the part between "In" and "Out" in new file. The fade areas will be applied after "In" and before "Out" mark (for saved part).

"**...**" - This button present only on iPhone and switches the set of operation buttons.

Please note: When you edit MP3 files they will be converted to the M4A (MPEG-4 AAC) format which is more optimal for use.

Audio input controls

This panel contains controls for the audio input of recorder. These parameters apply to any type of input for this application - microphone, external audio interfaces, Audiobus and Inter-App audio inputs.

This panel opens with the button "**Audio input controls**" on the recorder control panel (on the main screen).

>>> More about "Recorder controls"

At the top of this panel placed info about current state of audio input and output for this application. The next section contains input peak level meter and input limiter meter. These meters always show input level and input limiter even in playback or when scaper active. Next sections contain control elements.

Input channels and filters

Button at the right selects input channels for recording. When input in stereo mode the recorded file also will be stereo (with two channels), when input in mono mode (selected left, right or mix of left and right channel) recorded file will be mono (one channel).

The buttons below set the frequency for low and high cutoff input filters. Input filters is useful when recording from microphone or when you will record the sample to use it in the scaper. A smaller bandwidth can eliminate unwanted noise and provide for scaper more space for changes and saturation the sample.

For greater flexibility in the processing of the sample in scaper (especially with extremal effects) set the narrow bandwidth with "**100**" - "**10k**" cutoff. For work in looper mode it will be enough for almost all instruments to set the bandwidth with "**60**" - "**12k**".

When you record with microphone at least use "**40**" (Hz) cutoff so that the ultra-low frequencies do not affect on the peak level of the signal.

*Please note: When input monitor is "**On**" to the output will pass filtered signal. When input monitor in "**Thru**" to the output will pass the source signal before any processing (see button "**Monitor**" on the recorder control panel).*

The three faders below control the level of the recording signal.

"**Gate**" - Threshold level of noise gate in dB. Gate provides suppression (gate in "close" state) unwanted signal below threshold. For comparison with threshold uses RMS of input level (not peak). When gate is active on the level meter on the main screen will be marked area of input level at which the gate will be open.

"**Input amplify**" - Amplification of input signal after gate in dB.

"**Automatic gain control**" - This fader sets the speed of automatic gain control. This option can be very useful especially when you record with microphone environmental sound and noises in open space or other natural sounds.

In any way for well warping sound the scaper needs normalized and even better compressed sample. For this you can set the input level manually (with slight limiting) if the input signal has more or less steady level. Or you can use automatic gain control (AGC) option for that. But AGC not ideal tool and more suitable for signal with a level that does not change very quickly.

Below the AGC fader placed bar that indicates the current level of amplification in AGC.

Please note: At the end of input chains before recorder there is the brickwall limiter that prevents any clipping after amplification or automatic gain control.

"**Monitor amplify / attenuate**" - This fader sets the level of amplifying or attenuating signal of the input monitor when it in modes "**on**" or "**thru**". The button "**Input monitor**" on the recorder control panel sets the input monitor mode.

"**Start record threshold**" - Set the threshold of input signal level (after filtering and amplification) when recorder will be started (see button "**Record start**" on the recorder control panel).

"**Stop record threshold**" - Set the threshold of input signal level (after filtering and amplification) when recorder will be stopped (see button "**Record stop**" on the recorder control panel).

"**Stop record time**" - Set the time during which the input signal should be less "**Stop record threshold**" to stop the recorder. This option allows to change the speed of response the recorder on signal end.

>>> More about "Recorder controls"

Record and loop time

This panel opens by tap on any timer area on the main screen. In this panel you can set mode of central counter of timers on the main screen and set time limit for recording in the "**timer**" and "**loop**" modes.

"**Timer time value**" - Selects the type of counter on center of the main screen - "**Seconds**" or "**Measures**".

In the "**Measures**" mode when the recording is stopped manually (by button "**Record**" on the recorder control panel) or when input signal falls below the threshold (button "**Record stop**" set to "**silence**") the recording always stops at the end of current (completed) measure.

"**BPM source**" - Select source of BPM value. FieldScaper can getting MIDI synchronize and calculate BPM from Inter-App Audio MIDI, Ableton Link, external MIDI device (from main or alter device assigned in the panel

"**Settings**" - "**MIDI**") or use internal BPM value.

In "**Auto select**" mode the application will select external BPM when it available. Otherwise will be used internal BPM value. At first will be checked for Ableton Link (when it is enable), then Inter-App Audio MIDI and then external MIDI device.

In the mode "**Internal**" always will be used internal BPM specified in this panel. This mode marked as "**i**" near at BPM value in the timers panel on the main screen.

In the modes "**MIDI Main sync**" / "**MIDI Alter sync**" will be used BPM from external MIDI device when it presents, otherwise will be used internal BPM. These modes marked as "**m1**" / "**m2**" near at BPM value on the main screen.

In the mode "**Inter-App Audio**" will be used BPM from IAA host application when it presents, otherwise internal BPM. This mode marked as "**ia**" near at BPM value on the main screen.

"**Time signature**" - Select time signature which with the BPM value used for calculating measures from specified time and vice versa.

"**Recording / loop fixed time**" - Time limit which used at recording when "**Record stop**" button is set to "**timer**" mode or "**Scaper start**" button is set to "**loop**" mode (on the recorder control panel).

The six buttons below the current timer value are intended for changing this value.

"**Recording / loop fixed measures**" - Measures limit which used at recording in the same modes as the time limit. The "+" sign after value indicates that specified time more than current measure and beat and less than next beat (ie between two beats).

"**Internal BPM**" - Internal BPM value. Can be set by buttons below the value or by tapping on the value.

>>> More about "Recorder controls"

Ableton Link

Button "**Ableton Link**" opens panel in which you can enable Ableton Link feature and set additional modes.

For syncing BPM and start / stop with Ableton Link you need to set "**BPM source**" mode in "**Auto select**". When Ableton Link is active it will be marked as "**al**" near at BPM value on the main screen.

Additional modes of sync the start and stop with Ableton Link you can set in the panel of application settings. Use button "**Settings**" on the main screen to open this panel then button "**Modes**".

>>> More about "Assign MIDI controls"

When Ableton Link is active the sequencer and LFOs (when "**Range**" options set to "**BPM**") are syncing with other apps with active Ableton Link. When you start the oscillator synchronization of start is perform on beat.

*Please note: When you change parameters of **Sequencer** (Enable, Steps, BPM divider) or **LFO** (Enable, Range, Rate, Wave type) or change preset or scene it can requires a small time for restore correct sync. Also you can restart the oscillator for sync.*

Scaper main controls

The second part of main controls below the recorder panel is the scaper control panel. For iPhone and iPad in portrait orientation it is common panel for all oscillators. Current oscillator you can select by buttons "**Oscillator 1**", "**Oscillator 2**" and "**Oscillator 3**" in this panel.

On the iPad in the landscape orientation all three panels of the oscillators are below recorder interface. Each panel contains the own button "**Start**" for starting oscillator.

When you select an oscillator, the waveform panel above shows the sample loaded into that oscillator.

*Tip: To reset all parameters and files of the scaper select the "Empty scene" in the scenes control panel (button "**Scenes**"). Or you can create new empty scene (buttons "**Scenes**" - "**Empty**").*

>>> More about "Scenes"

"**Start**" - Starts the scaper oscillator. Oscillator will playaback current loaded or recorded sample countinuosly. Scaper also could be started automatically at the record stops. For this the mode "**Scaper start**" should be set to "**auto**" or "**loop**". When the mode "**Single oscillator**" is set (in "**Settings**") others oscillators will stopped.

"**All**" - Start / stop all oscillators together. If only one or two oscillators started (not all) the LED marker on this button will flash.

Start of oscillators can be synced with other applications thru Ableton Link. After tap the button "**Start**" or "**All**" oscillators will be wait for first beat which is synchronized with other connected applications. In this case the title of button "**Start**" during wait cycle will be replaced to "**SYNC**". Enable or disable Ableton Link you can in the panel "**Record and loop time**".

>>> More about "Record and loop time"

"**S**" - Solo mode for the current oscillator (in portrait orientation of device).

"**M**" - Mute mode for the current oscillator.

"**Oscillator**" - Select the current oscillator.

Below the control buttons (on iPad in landscape orientation below the title) there is preset list. In this list you can select the preset for the current oscillator and filter. Different preset can be assigned for each oscillator.

When you change the parameters of the current oscillator or filter parameters it does not overwrite the selected preset (unless you choose "**Save**" on presets control panel). To save any changes you made to a preset without overwriting the current preset, select "**New**", then "**Rename**" it to whatever you like.

Tip: You can open presets control panel by tap the button at the top right in the list.

>>> More about "Presets"

"**Main effect**" - This is the main control of the dynamic presets. This fader can change several parameters of the current preset at once.

Each preset sets the different parameters for the current oscillator. This fader can be assigned for changing several static parameters of the preset simultaneously. So the static preset can be dynamically changing in the wide range.

"**Level**" - Set the output level for the current oscillator.

*Please note: Values of "**Main effect**" and "**Level**" are not stored in the preset. When you change the preset these values remain the same. But these values will be stored in the scene.*

Assign LFO

Below "**Level**" fader is a horizontal display "bar" which indicates actual parameter value. This value is the sum of the current fader value and value defined by LFO and value defined by the "Main effect" which also can be assigned to this fader. When the LFO or Main effect are not assigned to the fader the actual value bar will be equal to the fader value.

Button "**lfo**" near this fader opens panel with parameters of the LFO and Main effect assigned for this fader.

>>> More about "LFO controls"

Equalizer

Button "**eq**" near fader "**Level**" opens panel of three band parametric equalizer for this oscillator. By default all bands are off.

Equalizer placed after all effects before mixer. With equalizer you can boost or suppress signal level on selected frequency in three bands - high, middle and low. For example so that each oscillator not interfere with others in the same band.

"**Ena**" - Enable selected band.

"**Wid**" - Select the wide (on) or narrow (off) bandwidth for selected frequency.

"**Shf**" - Select shelf (on) or peak (off) equalizer mode.

"**Freq**" - Nine buttons above fader select the frequency for each band.

"**Gain**" - Fader sets the gain for selected frequency from -20 db to +20 db.

"**agc**" - Enable Automatic gain control (**AGC**) for output signal.

*Please note: Fader "**Level**" on the main screen changes the level of output signal after **AGC**.*

"**Amplify**" - By this fader you can compensate signal level when signal attenuated by equalizer or other filters. Below this fader there is a bar indicates amplification level by **AGC**.

Sequencer

Button "**seq**" near fader "**Level**" opens panel of step sequencer for this oscillator.

The step sequencer provides two type of effects. Changing value one of parameter of oscillator or filter by value which can be set for active step of sequence. Start envelope generator on active step. By default both of these effects are off.

>>> More about "Sequencer"

Presets

In the oscillator control panel on the main screen there is a list of presets which can be selected for each oscillator.

Selected preset can be dynamically changing in wide range by the fader "**Main effect**" below the preset list.

*Please note: When you choose the presets the value of faders "**Main effect**", "**Output level**" and buttons "**Mute**" / "**Solo**" will not changing.*

To create new preset from the current find the preset which is more suitable for your idea. Then you can change any preset parameters on the panels that open by buttons "**Oscillator**" and "**Filter**". Also use buttons "**lfo**" above the faders to change the LFO settings assigned for specific parameter. After changing parameters of current preset tap the button at the top right in presets list to open the control panel. In this panel use button "New" to create new preset with all of current parameters of oscillator and filter. The new preset will have default name. You can rename current preset by button "Rename".

Tip: If you have saved current parameters in the one of predefined preset and would like to restore original preset just delete it from the list. At the next start of the application this preset will be restored with original parameters.

Presets control panel

Tap the button at the top right in the list to open the presets control panel. Tap this button again to close control panel.

"**Save**" - Save all current parameters of the oscillator and filter to the selected preset. If you do not want to confirm saving each time set the "**Do not warn when overwrite**" option in the settings.

"**New**" - Create new preset with the current parameters of oscillator and filter. Preset will be created with default name.

"**Rename**" - Rename the selected preset. The presets in the list placed in alphabetical order.

"**Delete**" - Delete the selected preset. If you delete one of predefined presets it will be restored at next start of the application. To prevent this set the "**Do not create predefined presets**" option in the settings.

"**Copy**" - Copy the selected preset to the text clipboard. Next you can paste this preset in email or in any other application for send this scene to another device or backup.

"**Paste**" - Paste the new preset from text clipboard (if exists) and set this preset as the current one.

Please note: Changing the preset do not change the scene parameters.

Oscillator controls

Scaper engine has three sample based oscillators that generate sound. Oscillator continuously plays loaded or recorded sample. Also each oscillator can work in the loop mode when input signal immediately processing without recording (see "**Scaper start**" mode button, mode "**loop**").

You can select current oscillator by buttons "**Oscillator 1**", "**Oscillator 2**" and "**Oscillator 3**" on the scaper panel (below recorder panel) on main screen. In the landscape orientation on iPad all three panels of oscillators are placed below recorder.

Button "**Oscillator**" at the bottom of the main screen opens control panel of oscillator parameters. This panel contains three sections. The section "Clock" has controls of oscillator clock which sets the speed of sample playback. The section "Address" intended for changing the sequence of sample selection addresses. The section "Distortion" defines options for distortion of original sample.

At the top of panel placed buttons for select the current oscillator and buttons "**S**" (solo) and "**M**" (mute) for the current oscillator.

Section "Clock"

"**Fast**" - Select the mode of fader which control the clock frequency (fader "Clock"). When this button is ON the fader sets the multiply coef for the clock (faster), otherwise the fader sets the divide coef (slower).

"**Rev**" - Reverse address counting (reverse playback).

"**Aaf**" - Anti-aliasing filter. This filter has effect only when you turn on the address mask (see section "**Address**"). It smooths transitions when the address mask breaks normal sample playback. This allows to obtain more smooth sound especially with mode "**Area**" and when mask applied for high bits of address (indicator shows marks at right).

"**Clock**" - This fader sets the clock frequency. Defines dividing (sign "**/**") or multiplying (sign "**x**") coef for the clock frequency. Clock frequency affects on the speed of sample playback.

"**Clock offset**" - Offset in percent from the current clock frequency.

Tip: Double tap on any fader to reset it in default position.

Section "Address"

The most creative and unique way to changing the sample sound is to shorting the address lines. Shorting the lines leads to interruption of correct address counting and breaks normal playback of sample. It is a way of creation noises, glitches, granular sounds and unpredictable micro-loops within sample.

In the top of section there is indicator which shows the current address mask. Each LED in this bar indicate applying mask to each of 20 bits address line (from address line 0 LSB to line 19 MSB). Below are placed buttons for different modes of applying this mask for the address counter.

"**Ena**" - Enable applying the address mask.

"**Set1**" - All selected address lines will be set to logic 1. Changing the clock address (by the clock counter) will not affect on these lines.

"**Set0**" - All selected address lines will be set to logic 0.

"**SetA**" - When logic 1 will set on one of selected lines all lines above (upper bits) also will set to 1.

"**SetB**" - When logic 1 will set on one of selected lines all lines below (lower bits) also will set to 1.

"**Area**" - The sample will divided on 20 areas and each area will playing when address line is active. It is the sample slicing mode which controls by address mask.

"**Mask selector**" - This fader selects the one of predefined address mask.

"**Mask shifter**" - Shifting current address mask to left or right.

Section "Distortion"

This section contains complex filter including ring modulator, overload and noise. All of these filters control by one fader "**Depth**". But ring modulator has additional fader "**Frequency**". You can turn off the ring modulator by button near fader "**Frequency**" and control only overload and noise.

"**Lofi**" - Set the Lo-Fi mode. In this mode sample rate and bit depth of oscillator sample will be dramatically reduced (including in the "Loop" mode). This will increase harmonic distortion and with further processing (especially with overload and decreasing the clock speed) can give more rich to the sound.

"**Dig**" - Even more digits. Reduce bit depth of sample. Gives more "digital" and hard sound with additional harmonics.

"**Ovr**" - Overload. This button increases range of overload which add by "**Depth**" fader.

"**Nos**" - Noise. This button increases range of noise which add by "**Depth**" fader.

*Tip: Options "**Dig**" and "**Nos**" become more audible when you change the clock speed.*

"**Rng**" - In depends of selected effect this option defines range or speed for the first fader.

- Ring modulator range is 200 Hz - 2 kHz or 1 Hz - 128 Hz.
- Flanger fast or slow.
- Phaser time from 1.0 to 10.0 sec or from 0.1 to 1.0 sec.

"**Tri**" - This option defines form of modulation signal for Ring modulator (Sine or Triangle) or LFO mode for Flanger and Phaser.

"**On**" - Enable effect. When effect is off the first fader not used but second fader defines the level of presence other effects like overload and noise.

- The next three buttons select the effect: Ring modulator, Flanger or Phaser.

"**First fader**" - Defines frequency of modulation signal for ring modulator, speed for flanger or time for phaser.

"**Depth (second fader)**" - Complex fader for changing the depth of ring modulation and level of noise and overload of the signal.

Assign LFO

Below each fader placed the bar which indicates actual parameter value. This value is the sum of current fader value, value defined by LFO and value defined by Main effect which can be assigned to each fader. When the LFO or Main effect are not assigned to the fader the actual value bar will be equal to the fader value.

Button "**lfo**" near each fader opens panel with parameters of the LFO and Main effect assigned for this fader.

>>> More about "LFO controls"

Main effect and MIDI marks

At right from the "**lfo**" button there are two marks. The mark "**mf**" indicates that the current parameter is assigned for changing with the "**Main effect**" fader. The mark "**md**" indicates that the current parameter is assigned on MIDI control.

>>> More about "LFO controls"

Filter controls

The signal from oscillator (after all processing sections in the oscillators panel) is sent to the filter. Each oscillator is associated with its own filter.

Filter panel contains three sections - cutoff filters, delay module and the spatial mixer at the end of processing. Passing the signal corresponds to the order of sections.

At the top of panel placed buttons for select the current oscillator (and filter associated with this oscillator) and buttons "**S**" (solo) and "**M**" (mute) for the current oscillator.

Section "Filter"

"**LPF**" - Select low-pass filter.

"**HPF**" - Select high-pass filter.

"**BPF**" - Select band-pass filter. Fader "**Resonance**" for this filter changed to "**Bandwidth**".

"**BSF**" - Select band-stop filter. Fader "**Resonance**" for this filter changed to "**Bandwidth**".

"**Frequency**" - Fader sets the cut off frequency for the selected type of filter.

"**Resonance**" - Fader sets the resonance level or bandwidth for band-pass filter.

Tip: Double tap on any fader to reset it in default position.

Section "Delay"

"**0.5s**" - Select the range of delay time from 0.004 to 0.5 secs.

"**2.0s**" - Select the range of delay time from 0.5 to 2.0 secs.

Please note: When none of the ranges selected the delay is off.

"**Sgl**" - Single delay mode. The source signal will repeat one time. The feedback level sets the level of delayed signal.

"**HiC**" - Enable cutoff filter for high frequency for delayed signal (not for direct signal). This option allows eliminate unwanted high frequencies of repeates and makes delayed signal more audible (especially for low feedback with very dense signal).

"**PhL**" - Invert the phase of delayed signal for left channel.

"**PhR**" - Invert the phase of delayed signal for right channel.

Changing phase of channels it is very creative mode of phase shifter. The phase of delayed signal always inverted. Then inverted signal is mixed with the source. Next the inverted delayed signal passed back to the delay input and after delay will inverted again. This is a continuous changing the phase of the delayed signal. The stereo panorama (position in space) for the source signal will be totally destroyed. But it can have interesting effects in some cases.

"**Time**" - Fader sets the delay time in the selected range.

"**Feedback**" - Fader sets the feedback of delay (increase level and number of repeates for delayed signal).

Section "Mixer"

All signals from output of filters are sent to the spatial mixer. Unlike usual mixers this mixer is combined with reverb and simulates placing sound source in enclosed space. Moving the faders in mixer section you changes the side and distance from sound source to the listener.

"**Rev**" - Enable reverb for the current oscillator. When reverb disabled the spatial mixer works as usual mixer with panorama and and attenuation (fader "**Distance**").

"**Nar**" - Select reverb algorithm - wide or narrow. This is two completely different reverberation algorithms. Narrow algorithm has a lower stereo base. But in some cases it sounds more transparent and clear.

"**Blur**" - Add blur to reverb signal. It can give very interesting psychedelic effect but sounds less clear. Noticeable mostly on mid and large reverberation space size and reflections level (buttons "Refl" and "Spc"). This mode adds modulation and oversampling.

"**HiC**" - Enable cutoff filter for high frequency for the reverb reflections (not for direct signal). This option allows eliminate unwanted high frequencies in reflections and makes the reverberation more clear.

"**Refl**" - Add more reflections for the reverb.

"**Spc**" - Increase reverberation space.

"**Distance**" - Fader sets the distance from signal source to the listener. When distance is 0% the signal source placed near with the listener.

"**Panorama**" - Fader sets the side where the signal source positioned relative to the listener.

Assign LFO

Below each fader placed the bar which indicates actual parameter value. This value is the sum of current fader value, value defined by LFO and value defined by Main effect which can be assigned to each fader. When the LFO or Main effect are not assigned to the fader the actual value bar will be equal to the fader value.

Button "**LFO**" near each fader opens panel with parameters of the LFO and Main effect assigned for this fader.

>>> More about "LFO controls"

Main effect and MIDI marks

At right from the "**lfo**" button there are two marks. The mark "**mf**" indicates that the current parameter is assigned for changing with the "**Main effect**" fader. The mark "**md**" indicates that the current parameter is assigned on MIDI control.

>>> More about "LFO controls"

LFO controls

The first section of this panel contains controls of the low-frequency oscillator (**LFO**) which intended for slow changing the value of assigned parameter of the oscillator or filter. The first fader on this panel sets the main value of parameter which assigned to this **LFO**. Name of this parameter you can see above the fader. This value is the same as value on previous control panel of oscillator or filter.

Each parameter of oscillator or filter can have an individual **LFO** or be assigned on the one of three **LFO** groups. When you assign parameter for the group the general controls of **LFO** such as "**Range**", "**Rate**" and "**Wave**" (exclude "**Depth**" and "**Invert**") are common for this group.

Section "**Effect**" on this panel gives you possibility to assign the "**Main effect**" fader for changing the value of the current parameter (with or without assigned **LFO**) or for changing the **LFO** parameters. Fader "**Main effect**" can be assigned for changing several parameters at once within the same oscillator.

Section "LFO"

"**Enable**" - Enable **LFO** for the current parameter (fader "**Parameter**").

"**Grp 1**", "**Grp 2**", "**Grp 3**" - With these buttons each parameter can be assigned to the one of three **LFO group**. When these buttons are OFF the parameter will be assigned to the own **LFO**.

"**Parameter**" - Change value of the current parameter of oscillator or filter for which **LFO** can be assigned. This fader is the same as the fader on parent panel of oscillator or filter.

Using this fader you can set the main value of parameter. The **LFO** and "**Main effect**" values will be added to this value. Actual value of parameter will be indicated by the bar below the fader.

The next several controls define the rate of LFO. These parameters are individually for each **LFO** and **LFO group**.

"**1s**" - Select range of **LFO** rate from 0.1 to 1.0 secs.

"**10s**" - Select range of **LFO** rate from 1.0 to 10.0 secs.

"**90s**" - Select range of **LFO** rate from 10.0 to 90.0 secs.

"**BPM**" - The rate of **LFO** will be specified by beats instead of time. In this case the fader "**Rate**" specifies number of beats for half of **LFO** cycle. The duration of each beat defines by the **BPM** value.

This option allows you synchronize **LFO** cycle with other devices and applications which support sync thru MIDI, Inter-App Audio or Ableton Link.

>>> More about "Record and loop time"

*Please note: When you use **BPM** sync and change parameters of **Sequencer** (Enable, Steps, BPM divider) or **LFO** (Enable, Range, Rate, Wave type) or change preset or scene it can requires a small time for restore correct sync. Also you can restart the oscillator for sync.*

"**Rate**" - This fader changes the **LFO** rate. The range of the rate can be changed by buttons "**1s**", "**10s**", "**90s**" and "**BPM**".

Next controls define the waveform parameters. These parameters can be for individual **LFO** or **LFO group** (except "**Depth**" and "**Invert**").

"**Sine**" - Select the sine waveform of the **LFO**.

"**Triangle**" - Select the triangle waveform of the **LFO**.

"**Square**" - Select the square waveform of the **LFO**.

"**Random**" - Set the random changing the depth value from 0% to the current value of the "**Depth**" fader.

"**Invert**" - Invert the value of **LFO**. This parameter very useful to invert changes of some parameters which assigned to one **LFO** group.

"**Depth**" - Depth of changing the parameter value for which the **LFO** was assigned (relatively the main value specified by the fader "**Parameter**").

Section "Effect"

"**Parameter**" - This button assigns the main effect fader on the parameter value. Changing the main effect (fader "**Main effect**" on this panel or on the main screen) will change the current value of the parameter (fader

"**Parameter**"). The mark "**mf**" (at right from "**lfo**" button on previous panel) indicates that this mode is on.

"**Depth**" - This button assigns main effect fader on the **LFO** depth value. Changing the main effect (fader "**Main effect**" on this panel or main screen) will change the depth value of the current **LFO** (fader "**Depth**").

"**Invert**" - This button inverts the main effect value for assigned parameters. With this mode you can set changing the value of different parameters of oscillator and filter in opposite directions.

Please note: When none of parameter selected the main effect is not assigned.

"**Value range**" - This fader sets the range in which the main effect will change value of assigned parameter (this fader will be "**Unassigned**" until none of parameter selected for main effect).

"**Main effect**" - This fader sets the value of the main effect. This is the same fader which available on the scaper panel on main screen. This fader is common for all assigned parameters and can be assigned for several parameters.

Assign MIDI controls

Using the button "**MIDI**" (above the button "**Parameter**") is the easiest way to assign MIDI control for the current parameter of oscillator or filter. When you tap this button flashing red LED will indicate on waiting MIDI event for assigning. Turn the knob or move fader on the external MIDI controller to assign this control to the current parameter. If this parameter already assigned the button LED will be green.

Before you start assigning MIDI events to the controls make sure that you have selected external controller or virtual/network MIDI input as main or alternative input device. Then you need check that this input sends MIDI events to the application. You can check it by flashing marks below channel buttons. Then select or create MIDI controls map in which all assigned events will be stored. All of this you can make in the panel "**Settings**" - "**MIDI**".

You can find all assigned controls for faders and assign buttons in the list on the panel "**Settings**" - "**Assign**". Also in this panel you can reset assigning.

>>> More about "MIDI devices"

Sequencer

The step sequencer provides two type of effects. Changing value one of parameter of oscillator or filter by value which can be set for active step of sequence. Start envelope generator on active step. By default both of these effects are off.

The sequencer is individual for each oscillator but can work synchronously when you start all oscillators at the same time.

The sequencer and **LFO** (when "**Range**" options set to "**BPM**") can be synced with other devices and applications which support sync thru MIDI, Inter-App Audio or Ableton Link.

With Ableton Link each application can start independently and will be synced with other at start of the next beat.

>>> More about "Record and loop time"

When you use synchronization thru Inter-App Audio or MIDI the best way to start all applications and devices at the same time. In these modes sync is perform on 1/4 beat.

Parameters of sequencer are stored in oscillator preset and scene.

Parameter change section

"**Ena**" - Enable change selected parameter on active steps of sequence.

"**Hld**" - Hold active step. In this mode sequencer use only this step value for changing parameter. This mode useful for tune each step value.

"**Parameter**" - Parameter of oscillator or filter which will be changed on value of active step. Tap to this button to switch on the next parameter.

*Tip: The actual value of each parameter of oscillator and filter consists of base value which set by parameter fader, plus "**LFO**" value, plus "**Main effect**" value and plus "**Sequencer**" step value. "**LFO**", "**Main effect**" and "**Sequencer**" can be assigned or not for each parameter. The value bar below each fader indicates the actual value of parameter.*

"**Stp**" - Set the selected step as last step of sequence.

"**Sequencer steps**" - This area contains vertical bars that set the value of step for changing selected parameter and buttons for activate each step. Inactive steps do not change parameter. Above the buttons there are line of LEDs indicate current step and holded step. In this section you can select step and change values of steps. Line below the buttons shows number of sequence steps.

"**Value**" - Set value of changing selected parameter. Value is setting for selected step.

"**BPM**" - Switching of sequence steps is synced with BPM. With these buttons you can set multiplier or divider for speed of switching.

"**Length**" - This fader sets the length of active step. This value does not affect for changing parameter but uses for control of envelope generator (ADSR). This value calculates from the current BPM. Use of BPM multiplier / divider not affect on this value.

*Tip: When the active step of sequence becames current it starts the "**Envelope generator**". "**Envelope**" begins from "**Attack**" phase, then "**Decay**" and after it "**Sustain**". When the step time is out the "**Sustain**" phase stops and "**Release**" phase starts. In common case the length of step affect on length of "**Sustain**" phase of course if the length "**Attack**" and "**Decay**" less than length of step.*

Envelope generator section

"**Ena**" - Enable start envelope generator (ADSR) on active steps of sequence.

"**Beg**" - Start the sample from begin. Each active step will reset playback pointer to the begin of sample.

"**Dly**" - Apply envelope before delay effect. By default envelope applied after all effects before mixer.

"**Res**" - Reset all parameters of sequencer to default.

"**Attack**" - Time of attack phase.

"**Envelope type**" - Type of attack envelope. "lin" - linear, "exp" - exponential (slow rise), "log" - logarithmic (fast rise).

"**Decay**" - Time of decay phase.

"**Envelope type**" - Type of decay envelope. "lin" - linear, "exp" - exponential (quick fall), "log" - logarithmic (long fall).

"**Sustain**" - Level of sustain phase.

"**Sustain mode**" - Sustain mode. "sus" - general mode with sustain phase, "sgl" - single mode without sustain phase, "cyc" - cycle without sustain until the time of step is out.

"**Release**" - Time of release phase.

"**Envelope type**" - Type of attack envelope. "lin" - linear, "exp" - exponential (quick fall), "log" - logarithmic (long fall).

Scenes

The scene gives you possibility to store all parameters and assigned files for all oscillators. Also the scene stores all presets and files assigned to hot buttons in the "**Looper**" mode.

The scenes control panel opens by button "**Scenes**" at the bottom of main screen (at the top right on iPad in landscape orientation).

*Please note: To save all parameters to scene you need select the scene in the scenes control panel and tap button "**Save**". The scene will change only when you save it manually.*

The row in scene list contains name of scene and names of the presets assigned to each oscillator. The scene will be stored all parameters including the parameters of presets even if the specified presets not exists in the presets list.

Buttons at the bottom are intended for manage scene list.

"**...**" - This button switches the list of available operations for other buttons.

"**Set**" - Set the selected scene as the current one.

"**Save**" - Save all current parameters in the selected scene.

"**New**" - Create new scene and save all current parameters in this scene.

"**Empty**" - Create empty scene and set this scene as the current one. All current parameters will be reset.

"**Delete**" - Delete the selected scene. Current parameters are not changing.

"**Rename**" - Rename the selected scene.

"**Copy**" - Copy the selected scene to the text clipboard. Next you can paste this scene in email or in any other application for send this scene to another device or backup. The copied scene will contain all parameters of oscillators and names of assigned files but not the original files.

"**Paste**" - Paste the new scene from text clipboard (if exists) and set this scene as the current one.

"**Up**" - Move up the selected scene on one position in the list.

"**Down**" - Move down the selected scene on one position in the list.

"**Top**" - Move the selected scene to the top of the list.

"**Buttom**" - Move the selected scene to the buttom of the list.

Scene pack

You can pack the scene and all files and presets which uses in this scene to the single file. This file can be accessed thru system application Files, iTunes file share, Web access serive or copyed directly to Dropbox. Next you can unpack this file on any other device to completely restore the scene and all its files and presets.

Tip: It is a great way to transfer or duplicate scenes and files from one device to another and also backup scenes to desktop computer.

For packing the scene to the single file select scene in the list and tap button "**(Un) Pack**" at the right top of panel. In the list will appear the file with name of scene and with special symbol "*****" in the beginning of name. This file also accessed in "**File manager**" panel in the group "**Scene pack**". This file has extension "**.fieldscaper**".

To unpack scene select the file and tap button "**(Un) Pack**". When you unpacking the scene it will be checked for the match name of scene, presets and files. If the scene, preset or file with the same name already exists the unpacked name will be changed so for not overwrite already existing. But also will be compared with exisiting to prevent duplicates.

*Tip: The file with extension "**.fieldscaper**" it is just zip file with files that contain presets and samples. You can change extension of this file to "**.zip**" and unzip it on desktop computer to get samples files.*

Looper mode

The looper mode changes the user interface to more convenient use of application in real-time and processing external sources. Use the button "**Looper**" on the main screen to switch on this mode. For return to the main screen use the button "**Scaper**".

In this mode you can fast switch the presets and samples for each of oscillators. For oscillator there are five assignable buttons for presets and samples. First oscillator can be fast selected for processing of any external sound sources (include IAA and AB) in one of four modes.

Please note: In the looper mode application does not create any files when processing external sources.

"**Start**" - Start / Stop looper.

If no one of the next modes of input processing is not selected all oscillators will be started for playback samples. In this case the modes on the main screen will be "**Record start - manual**", "**Record stop - manual**", "**Scaper start - manual**".

When you select one of the input processing modes, the first oscillator will process external input and two other will continue playback their samples. In this case "**Record start**" and "**Record stop**" modes on the main screen will depend from selected looper mode and "**Scaper start**" mode will be "**loop**".

Tip: To switch off the input processing mode tap the active mode button again.

The next five buttons are selected the processing mode of external input.

"**Manual**" - In this mode record to the loop starts by button "**Start**". After recorded during the specified loop time this loop will playback continuously. To record new loop tap the button "**Start**" again. For stop recording / playback tap the button "**Start**" during record cycle. Record modes on the main screen "**Record start - manual**", "**Record stop - timer**".

"**Effect**" - In this mode the input signal will record to the loop, and oscillator playback this loop at the same time. The speed and direction of playback can differ from recording depending on current preset. Record modes "**Record start - manual**", "**Record stop - manual**".

"**Overdub**" - In this mode the record to the loop will be enabled when the input signal exceed specified threshold. When input signal falls below another threshold the record will be off but already recorded signal will continue playing back. The recording can be started and stopped at any time in the loop. Record modes "**Record start - signal**", "**Record stop - silence**".

*Tip: To shorten the time of stopping record when input signal falls below threshold you can set a lower value of "**Stop recording time**" on the "**Audio input control**" panel.*

"**Loop A**" - This mode intended for auto start record at the beginning of loop when input signal will exceed specified threshold. At the end of loop the recorder will stop and oscillator starts. Record modes "**Record start - signal**", "**Record stop - timer**".

Please note: The recorder will ready to start (after previous record) only when input signal falls below specified threshold.

"**Loop M**" - Mode for manual start recording to the loop. The LED on the "**Start**" button will flashing when waiting for record start. Tap the "**Start**" button to switch on the mode of waiting input signal. When input signal appears the record will start and stop at the end of loop. Record modes: "**Record start - repeat**", "**Record stop - timer**".

When you select the "**Loop M**" mode you can use input monitor when the looper waiting for start (The LED marker on the button "**Start**" is flashing). Set the "**Input monitor - on**" mode to get source signal on the output at waiting for start. After start the input monitor will mute.

*Please note: Start in all of these modes can be synced with other applications thru Ableton Link. When Ableton Link active start of looper will be synced with the first beat. During wait of the first beat title of the button "**Start**" will replace to "**SYNC**". To enable Ableton Link tap on the timers area on the main screen then button "**Ableton Link**".*

>>> More about "Recorder controls"

"**Input**" - This button opens the "**Audio input control**" panel. In this panel you can set the thresholds of input signal for start and stop recording.

>>> More about "Audio input controls"

Above the control buttons is placed the area in which the loop record is displayed. Two moving markers point the record and playback position in the loop. Bright bars indicate when the minimum of signal is present (above -35 db). Red bars mark the optimal level of signal for processing in the scaper (above -10 db).

The five buttons below the control buttons can be assigned for selecting presets and samples.

"**Assign preset**" - Assign preset for one of five buttons above. After tapping to this button you need select button to assign and then select preset for this button from the list.

"**Assign file**" - Assign file for one of five buttons above. After tapping to this button you need select button to assign and then select file for this button from the list.

Assign MIDI controls

You can assign MIDI controls for the preset and file select buttons and for looper "**Start**" button. All of these controls are at the end of list which accessible on the panel "**Settings**" - "**Assign**". Also in this panel you can reset assigning.

>>> More about "MIDI devices"

File manager

All recorded and downloaded files are accessible through file manager. The file manager panel opens by tap on the area with file name in main screen.

For more convenient organize of files you can create groups in which you can collect files with common context. For example it may be groups like Nature, Home, Street, Subway or Voices, Hits, Creaks, Animals or any others on your choice.

Please note: Name of groups are not stored separately but are the part of file name like a prefix before first comma. When you select list with groups you can see only file name which not contains name of group. But in other types of list you will see complete name of file which can contain the name of group. Files without group will be placed in the main list.

By default all recorded files are stored in the group "Recorded". You can change this group on any other or on main list (without group). For that use button "**Set group**".

Three buttons at the top right select the type of list. You can use list with created groups or list of files grouped by creation date. Also you can select the complete list of all files without groups.

Tip: When you open group list you can return to common list by tap at the top area with name of group.

"**Groups**" - List of files with user created groups.

"**Dates**" - List of files grouped by creation date.

"**All**" - Complete list of files without groups.

Buttons below the list are intended for manage files.

"**...**" - This button switches the list of available operations for other buttons.

"**Set osc**" - Set selected file for current oscillator. The name of this file and its waveform will be shown on the main screen for this oscillator.

"**Set group**" - Set current group as default group for recorded files. If you use this button in the common list the recorded files will be created without group (in the common list).

"**New group**" - Create new group. You can move any file to this group from main list or from other group.

"**Play**" - Playback selected file. Without processing, just for check what it contains.

"**Select**" - Select and unselect all files for common operation like delete and move.

"**Delete**" - Delete one current file or current group, or delete several selected files.

"**Move**" - Move one file or several selected files to specified group. When use this button will be opened the panel with list of groups. You need select the destination group and confirm operation by button "**Move**".

"**Rename**" - Rename selected file or group. Changing group name in the file name will move this file to another group.

"**Copy**" - Copy selected file to audio clipboard. This operation uses audio clipboard that is also available from other applications (iOS General pasteboard).

"**Paste**" - Paste audio file from clipboard (if exists). The pasted file will be created in "Pasted" group and always has an unique name.

"**Open In**" - Open selected file in another audio application. When you use this button at first the list of available destination applications will be opened. You can select destination application and after the file finished copying this application will be opened.

"**Web access**" - Enable web access service. If the Web service runs successfully you will see the URL (address) which you should specify in the web browser on your Mac / PC or another device to access this service. Through this service you can access to all files that contain in this application. Also with this service you can download files to this application.

Dropbox

You can use Dropbox service for download and upload samples with this application. Before use this feature you need register on the site of this service.

Button "**Dropbox**" at the top of panel opens Dropbox file list. In this list you can select one or several files and then download them in FieldScaper (button "**Download**").

For upload files from application to Dropbox you need select one or several files in the application file manager then open Dropbox list and use button "**Upload**" to start upload.

With the button "**Delete**" you can deleting files in Dropbox.

Download samples

In addition of records in FieldScaper you can download external samples and use them for oscillators.

The application can use samples in the wide range of formats: wav, aif, aiff, mp3, mp4, m4a, aac, caf, au, snd.

Sample rate of source file can be: 11025, 22050, 24000, 32000, 44100, 48000, 88200, 96000 Hz.

Bit depth can be: 8, 16, 24, 32 bits. One Mono or Stereo sample in file. The oscillator always uses one channel.

Maximum time of one sample which can be loaded in oscillator is about 95 sec. Samples that longer than this time will be truncated at loading (the sample file will not changed).

You can download the sample files in several ways:

Use Files app

Starting from iOS 11 the Files application can be used to operate with files on your device or cloud services. All records and samples which contain in FieldScaper can be accessed thru this application. To access FieldScaper files open the application "**Files**" - "**On My iPad (iPhone)**" - "**FieldScaper**".

With the Files application you can copy samples to FieldScaper from any other applications (if this application grants access to own files) or connected cloud services. Also with this application you can move, delete or rename files which contain in FieldScaper or copy records that made in FieldScaper to other applications or storage cloud services like iCloud, Dropbox, Google Drive.

Download through internal Web access service

Tap on the area with name of current file at the top of main screen. The panel of "**File manager**" will be opened. On the bottom of this panel tap the button "**...**" until the button "**Web access**" appears. Tap this button to start Web access service.

If the Web service runs successfully you will see the URL (address) which you should specify in the web browser on your Mac / PC or another device to access this service. Through this service you can access to all files that contain in this application. Also with this service you can download files to this application.

Please note: WiFi service must be enabled and connected on your device.

Internal Web access service works only in your local network (as example in the home WiFi network). You cannot use this option through the Internet or with public WiFi access point.

When the application switching to the background, Web access service will be stopped.

Use "Open in" for an audio file from another application

The FieldScaper supports copying audio files from other applications through the "**Open in**" option. If the application has this option, "FieldScaper" icon will appears in the list of destination applications.

Paste file from audio clipboard

The "**Copy**" and "**Paste**" buttons in the "**File manager**" panel give you ability to exchange audio data with other applications that support audio clipboard technology (support iOS general pasteboard operations).

In applications that support clipboard option "copy" you can copy audio data or file to the clipboard. When you switch back to this application, you can use the "**Paste**" button to paste audio file from the clipboard.

Download files from Dropbox

You can use Dropbox service for download samples to application. In the panel of "**File manager**" use button "**Dropbox**" to open the file list of this service. Select one or several files in the list of Dropbox and use button "**Download**" for downloading these file to FieldScaper.

Use iTunes file sharing

- Connect your iPad to your computer using the included USB cable.

- Launch iTunes on your computer.

- Select your iPad from the Devices section of iTunes.

- Click the Apps tab and scroll down to the bottom of the page.

- Under the File Sharing section, you will find a list of applications currently installed on your iPad that support File Sharing. Select "FieldScaper" application to view a list of the files associated with this application.

Please note: You may copy into the application only files with supported formats.

Application settings

This panel contains general configuration options for application.

Panel opens by button "**Settings**" (then button "**App**") at the bottom of the main screen.

"**Play in background**" - By default when application switches to background (becomes inactive) the playback will be stopped and application will asleep. Turn on this option so that application remains active in the background. This option has not affect when use Audiobus or Inter-App audio.

"**Disable turn off the screen after a while**" - Disable turning off the screen when there is no action (screensaver). By default screensaver is enable.

"**Rotary knob moves horizontally**" - By default changing the rotary knob value is performed by up and down movement. When this option is on changing the value is performed by left and right movement.

"**Record button at right**" - By default the "**Record**" button (and "**Play**" button on the scaper control panel) are placed at left side. You can change position of these buttons for the right side. It can be convenient when you use this application for field recording on iPhone.

"**Single oscillator mode**" - With this option only one oscillator will be active at a time. It is not very important but you can decrease load of CPU when you use only one oscillator instead of three. Of course if you do not need two others. In this mode when you start the current oscillator (by button "**Start**" on the oscillator control panel) two others will be stopped.

"**Record 24 bits files**" - By default recorded files are saved with 16 bits depth. It is more appropriate format for use with scaper because it requires less time for loading and processing and less space for storing but quality is good enough. But you also can recording files with 24 bits depth.

"**Enable bluetooth input**" - Enable audio input from Bluetooth devices. Note that enable this option may have implications for input latency.

"**Lock headset microphone**" - When you use headset with microphone this microphone will be set as primary input. But if you connect USB microphones at the same time or would like to use built-in device microphone you can disable use headset microphone as primary input. This option has not affect when use Audiobus or Inter-App audio.

"**Measurement mode**" - This option intended only for use with internal analog input and output (4-pole headphone jack). This mode improves audio fidelity and gives more bass response for that type of connection.

"**Boost mic input**" - Boost input level for internal or headset microphone.

Below the options list there is list of color schemes that you can apply for visual interface. For changing scheme select one from the list and tap button "**Set**".

MIDI devices

In this panel you can select the main and alternative MIDI device (external, network or virtual) for controls of application parameters. Also this panel contains the list of MIDI controls maps.

Panel opens by button "**Settings**" (then button "**MIDI**") at the bottom of the main screen.

The sixteen channel buttons (from 1 to 16) are intended for filtering MIDI events from input devices. MIDI events will be processed only from enabled channels. Below each button there is mark that indicates activity of channels for selected devices (regardless is channel enabled or not).

"**Auto**" - This button sets the auto selection mode for alternative input device and then for main input device. When this mode is enabled the first available device from the list will be assigned as main or alternative input. Highest priority have external MIDI devices (controllers) connected through USB. Next can be selected network connections, and then virtual MIDI inputs (that were created by other applications). By default this mode is enabled for main and alternative MIDI input. Mark "(auto)" before the device name indicates that this input is set to the auto selecting mode.

"**Alter**" - Assign the selected device from the list as an alternative input device. After it only the assigned device will be used for this input. If this device is not connected or unavailable the input will be inactive. Mark "(off)" will be shown before the device name.

"**Main**" - Assign the selected device from the list as main input device.

This application has possibility to store different MIDI controls maps. Each map contains all available in application controls that can be assigned to different MIDI events. You can create different maps for different external MIDI controllers or other MIDI applications.

*Please note: All changes that were made in the "**Assign**" panel will be stored in the current map. You can select current map by the button "**Set**" below the list.*

"**Delete**" - Delete selected map from the list. If you deleted the last map in the list will be created the default empty map.

"**Rename**" - Rename selected map.

"**New**" - Create new empty map and set it as current.

Please note: The new map will be contain the name of current main input device. But there is no hard links between maps and devices. You can set any map for any devices.

"**Set**" - Set selected map from the list as current.

Assign MIDI controls

This panel opens by button "**Settings**" (on the main screen) then "**Assign**". In this panel you can assign controls of oscillators and filters to the MIDI events. The list divided by groups that contain all available controls in this application. Buttons above the list select group of controls.

You can assign MIDI event for specific oscillator and filter (buttons "**Oscillator 1**", "**Oscillator 2**" or "**Oscillator 3**" above the list) or you can assign event for the current oscillator (button "**Current oscillator**"). Current oscillator can be selected by MIDI event assigned in the list "**Main controls**".

To assign MIDI event to the control you need select the control in the list and tap the button "**Learn**". Flashing LED mark on the button will indicate waiting of MIDI event. Then turn the knob or press the button on MIDI controller in order to send MIDI event to the application. This event will be assigned to the selected control. The same way you can assign controls for virtual MIDI inputs created by another applications (as example MIDI sequencers). To reset MIDI event assigned for the control tap the button "**Reset**".

Controls in the list marked as "**button**" operate as momentary buttons. Controls marked as "**toggle**" can operate as toggles or momentary buttons depending on setting in "**Additional MIDI modes**".

Please note: Each control can be assigned only for main or alternative MIDI input but any device can be selected as main or alternative input.

Before you start assign MIDI events to the controls make sure that you have selected external controller or virtual/network MIDI input as main or alternative input device. Then you need check that this input sends MIDI events to the application. You can check it by flashing marks below channel buttons. Then select or create MIDI controls map in which all assigned events will be stored. All of this you can make in the panel "**MIDI**".

Additional modes

Button "**Modes**" opens the panel with additional modes of operation with MIDI controllers and sync with other devices.

"**Use standard MIDI commands**" - This option enables use the standard MIDI commands for control of application without assign the controls. Supported standard MIDI commands - "play", "continue", "stop", "volume level".

"**Toggle controls will work as momentary buttons**" - This option defines as controls marked as "**toggle**" will operate with the MIDI events. When this option is Off the control will On or Off in depend from value of event. Control will be Off when received event with value 0 and On when received non-zero value with the same event. When this option is on all controls will operate as momentary buttons. Each MIDI event with non-zero value switch the state of control in a cycle. This option is On by default.

"**MIDI control changes the fader value in Direct mode**" - As soon as the physical MIDI control is moved, its new value is sent immediately to its destination parameter, usually resulting in abrupt value changes. This option on by default.

"**MIDI control changes the fader value in Pick-up mode**" - Moving the physical MIDI control has no effect until it reaches the value of its destination parameter. As soon as they are equal, the destination value tracks the control's value 1:1. This option can provide smooth value changes, but it can be difficult to estimate exactly where the pick-up will take place.

"**MIDI control changes the fader value in Scaling mode**" - This option ensures smooth value transitions. It compares the physical MIDI control's value to the destination parameter's value and calculates a smooth convergence of the two as the control is moved. As soon as they are equal, the destination value tracks the control's value 1:1.

"**Wide area of catching fader for Pick-up and Scaling mode**" - Area between physical control and fader value in which fader value becomes equal to the physical control. Ie in which the physical control catches the fader value. This can be useful on some MIDI controllers which skipped values at fast motion of control.

"**Send state of transport controls to the controller**" - State of controls marked as "**transport**" will sending back to MIDI controller. This option can sets the actual state for MIDI controller LEDs in depending from state of application controls.

"**Send state of oscillators buttons to the controller**" - State of the oscillator buttons will sending back to MIDI controller.

"**Send state of oscillators faders to the controller**" - State of the oscillator faders will sending back to MIDI controller. This option is actual only for endless encoders on MIDI controller that have value display. In other cases it is not recommended to use this option to avoid a flow of unnecessary MIDI events.

Please note: State of controls can not be send back to MIDI controller thru Inter-App Audio MIDI connection.

"**IAA and Audiobus record control starts scaper instead recorder**" - When you start record on the Inter-App Audio or Audiobus control panel or in the host application, FieldScaper will start playback instead of recording. In most cases it is more expected behavior. This option on by default.

"**With IAA host disable sync with Ableton Link**" - When FieldScaper is used with the Inter-App Audio host application (exclude Audiobus), host application will start playback in FieldScaper directly. In the most cases when host application already synced with Ableton Link there is no need to sync start of playback in FieldScaper with Ableton Link.

"**Send Ableton Link stop when all oscillators stopped**" - If you enable Ableton Link sync the FieldScaper will send stop event to other applications when all oscillators have stopped.

*Tip: To enable Ableton Link or set start / stop sync mode tap the timers area on the main screen then button "**Ableton Link**".*

"**Stop all oscillators when get Ableton Link stop**" - When this option is on all oscillators will be stopped when FieldScaper gets stop event from Ableton Link. Otherwise FieldScaper will ignore stop event.