



**Audiothingies DoubleDrummer**  
User manual firmware version 1.0.3

# Overview



## Specifications

The DoubleDrummer is a 12-voice drum sound generator. It is divided into 4 main sections:

### The synthesis section

This section features 6 different instruments: bass drum, snare drum, tom tom, clap, cowbell and hi hat.

Each of these 6 instruments has been fine tuned to provide a wide range of sounds within a limited set of 6 parameters per instrument for the best possible user experience.

### The sample player engine

With 6 instruments and 56 internal drum sounds, these can be useful to provide more natural sounding sounds that can be more difficult to synthesize within a limited parameter set, such as cymbals for example.

But they're also great for those "in ur face" 80's kick and snare sounds.

## **The mixer**

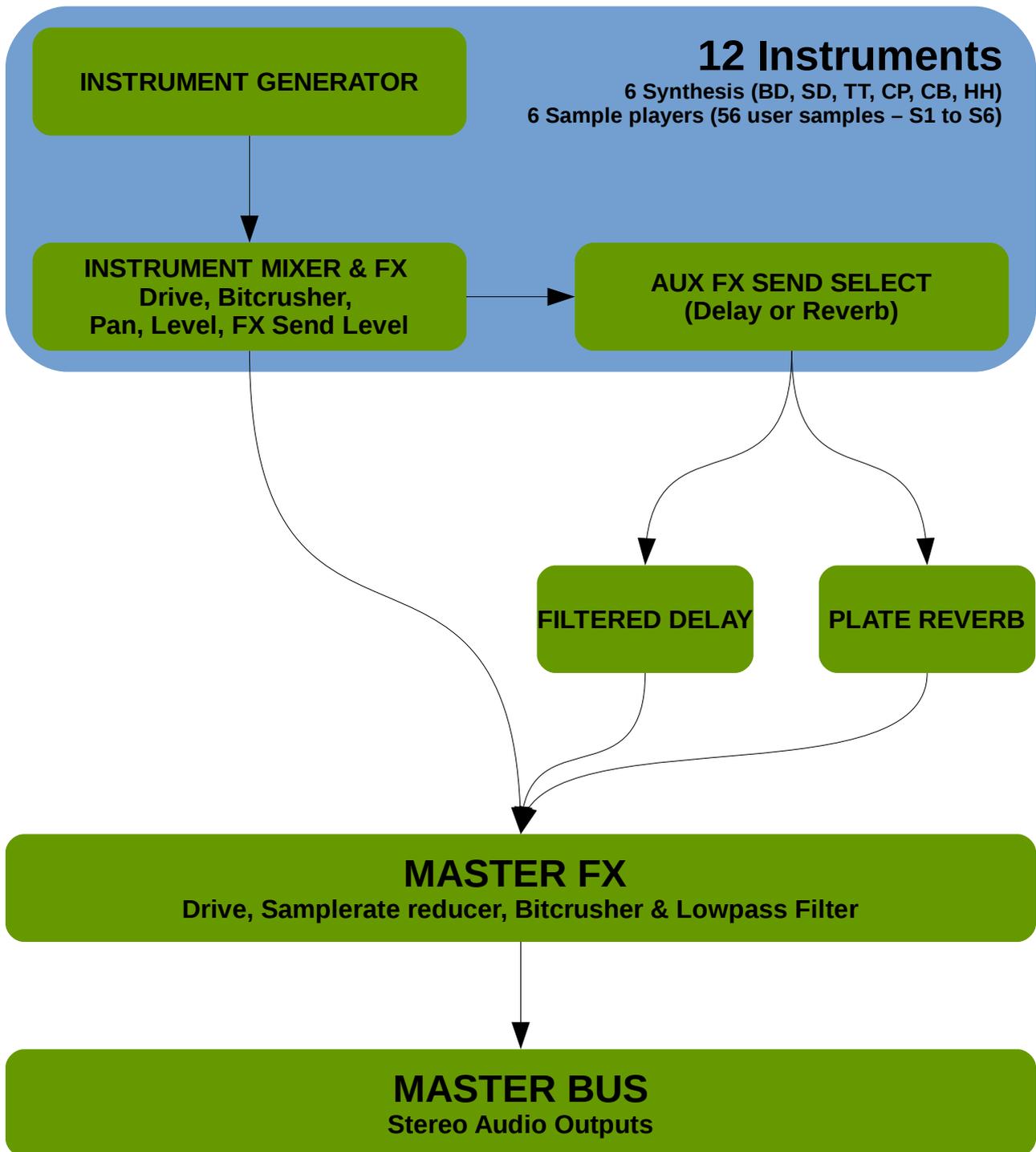
Each of the 12 instruments has its own mixer settings, with drive, bitcrusher, pan, main volume and fx send level.

## **The FX's**

2 “AUX SEND” effects are available: delay and reverb. Each one of the 12 instruments can be setup to use either one or the other.

A multi FX containing samplerate reduction, bitrate reduction and a 2-pole lowpass filter is available on the master bus.

# Signal Flow



## Front panel



On the front panel you will find:

- 2 x 24 characters LCD screen – Black on white
- 6 encoders with pushbuttons
- 9 pushbuttons with their associated LEDs
- 1 volume knob

## Rear panel



On the rear panel, from left to right on the above picture

- Audio outputs (use left output when using mono)
- MIDI connectors
- USB port – used for USB MIDI communication with a USB host and firmware updates (a SYSEX file sent over USB MIDI)
- 9V DC input socket (Center positive polarity, 2.1mm plug, 200mA minimum)
- Power switch

## Quick start

1. Connect audio outs to a mix table, turn the volume knob fully clockwise.
2. Connect a MIDI keyboard / sequencer into the DIN MIDI Input.
3. Power the DoubleDrummer with a 9V DC, center positive, 2.1mm plug PSU
1. Play C1 on MIDI channel 1, you should hear the bass drum playing  
The other notes triggering the different instruments are listed in the MIDI Map section of this manual
2. Press Load
3. Turn encoder 6 or press encoders 4/5 to navigate thru the patches. Press Load again to load selected patch, press Home to cancel and return to previously loaded sound.

# Using the DoubleDrummer

## Navigating pages

### How to navigate throughout the DoubleDrummer architecture?

Parameters are mapped across different sections accessed by pressing a corresponding button on the front panel.

When a section has several pages, you access them by successively pressing the same button several times. When you are on the last page, it returns to the first one.

For example, pressing FX several times will make you travel the following pages: DLY > REV > MFX > DLY > REV > MFX etc.

Some sections (the ones labeled in red under the white round buttons) are accessible by simultaneously pressing Home [shift] + another button. For example [shift] + FX will take you to the System page.

The encoders can be pushed to access menus that are shortcuts to specific parameters (level/pan/fx send/fx type and mute).

## Editing parameters

The LCD provides up to 6 parameters to edit depending on the menu you are currently editing

Simply use encoders 1-6 to change their corresponding parameter value.

*TIP: the encoder acceleration value can be changed in System menu, page 2*

*TIP2: you can temporarily disable the acceleration and lower the sensitivity of an encoder by pressing [shift] while turning the encoder.*

## Main page | HOME

This is where you land when you power your DoubleDrummer

```
P001      drv smp bit cut
InUrFace 15  0  0 120
```

You get the program number and name as well as shortcuts to 4 different parameters.

### HOME page parameter shortcuts

These 4 parameters can be set per preset, among the FX (delay, reverb and master fx) parameter set.

To change these parameters, press and hold FX button

```
encoder  en3 en4 en5 en6
assign   smp bit cut res
```

Use encoders 3 to 6 to change the displayed parameter

### Trigger activity Viewer

You also have access to a second screen by pressing HOME a 2<sup>nd</sup> time, this screen replaces program number and name with a trigger activity viewer

```
[ ] [ ] [ ] [ ] [ ] [ ]  drv smp bit cut
[ ] [ ] [ ] [ ] [ ] [ ]  15  0  0 120
```

The 6 trigger viewers on the upper line are tied to the synthesis instruments activity whereas the 6 trigger viewers on the bottom line show the S1 to S6 instruments activity.

# Instrument parameters

## Bass drum | BD

This instrument generates classic bass drum sounds.

BD-P	atk	dcy	hrm	bnd	tim
64	100	48	32	64	32

- BD-P           pitch
- atk            amount of clic transient
- dcy            decay time
- hrm            odd harmonics amount
- bnd            pitch mod amount
- tim            pitch mod decay time

## Snare drum | SD

This instrument is capable of generating snare drum sounds, and is very versatile especially thanks to its noise-related parameters.

SD-P	-decay-	nze	col	emp	
64	50	72	100	80	0

- SD-P           tone pitch
- decay1        tone decay time
- decay2        noise decay time
- nze            noise level
- col            noise color
- emp            noise emphasis (filter resonance)

## Tom tom | TT

This instrument is a bit special, as it can be triggered by 3 different MIDI notes generating 3 different pitches, while remaining monophonic.

```
TT-P low hi dcy mod pan
64 -5 +5 100 80 +32
```

- TT-P main tone pitch
- low low tom pitch (relative to main tone pitch)
- hi hi tom pitch (relative to main tone pitch)
- dcy decay time
- mod pitch modulation amount
- pan tom tom pan spread (relative to pan parameter set in mixer page)

## Tom tom in sample mode

In sample mode (see Instrument setup page), tom tom instrument is slightly different than a classic sample instrument, as it provides 3 note triggers to play the same sample at 3 different pitches, each with a different pan setting.

```
TT-P tun dcy low hi pan
tt1 -32 127 -5 +5 +24
```

- TT-P sample (tt1 to tt4)
- tun sample tuning
- dcy sample decay time
- low low tom pitch (relative)
- hi hi tom pitch (relative)
- pan tom tom pan spread (relative to pan parameter set in mixer page)

## Clap | CP

This instrument is capable of generating clap sounds

CP-P	atk	dcy	col	emp
	50	24	80	32

- atk            attack “burst” time
- dcy            noise decay time
- rev            “fake reverb” decay time
- col            noise color
- emp            noise emphasis (filter resonance)

## Cowbell | CB

Generated with 2 detuned triangle waves with their harmonics being filtered with a bandpass filter. Can also generate claves or beep sounds.

CB-P	off	bal	dcy	hrm	emp
	68	64	64	-5	32

- CB-P        tune
- off        tuning offset
- bal        oscillator balance
- dcy        decay time
- hrm        harmonics frequency offset
- emp        emphasis (filter resonance)

## Hi Hats | HH

The classic noise filtered hi hat trick

HH-P	cls	opn	col	emp
	30	50	115	94

- cls            closed hat decay
- opn            opened hat decay
- col            noise color
- emp            noise emphasis (filter resonance)

## Hi Hats in sample mode

When in sample mode (see Instrument setup page), the hi hats instruments is slightly different than a classic sample instrument, as 2 hats samples are used together to provide closed and opened hat sounds, each with its own decay time

HH-P	tun	cld	opd	cut	res
hh1	0	100	127	0	0

- HH-P            hat sample (hh1 to hh4)
- tun            tuning offset (+- 1 octave)
- cld            closed hat sample decay time
- opd            opened hat sample decay time
- cut            negative value: lowpass filter cutoff frequency  
positive value: hipass filter cutoff frequency
- res            filter resonance

## Sample 1 to sample 6 | S1 to S6

```
S1-P tun dcy cmp cut res  
bd5  0 101 104 -35  0
```

- S1-P sample slot
- tun tuning offset (+- 1 octave)
- dcy sample decay (1 – 100%)
- cmp sample “compression” (source dependent - more effective on longer sounds)
- cut negative value: lowpass filter cutoff frequency  
positive value: hipass filter cutoff frequency
- res filter resonance

## Instrument Mixer page

This is the 2<sup>nd</sup> page of an instrument, for example to access clap mixer page, press CP two times, and to access sample 3 mixer page, press [shift] + S3 two times.

```
BD-M drv bit pan lvl fx
  on  10   0   0 100  0
```

- BD-M instrument status (on, means mute is off)
- drv drive level
- bit bit reduction level
- pan panoramic
- lvl level
- fx effect send level (see instrument setup page to choose the send fx)

## Instrument setup page

This is the 3<sup>rd</sup> page of an instrument, but it is kinda “hidden”: to access a specific synthesis instrument setup page, press and hold its button for 1s, for example, to access the cowbell instrument setup page, press and hold CB, and to access a specific sample instrument setup page, press and hold shift + its corresponding button, for example, to access the sample 6 instrument setup page, press and hold [shift] + S6

BD - H	vel	fx
syn	64	dly

- BD-H Instrument type (sample / synthesis) – Synthesis instruments only  
synthesis instruments can be turned into sample instruments
- vel velocity sensitivity  
adjusts how velocity sensitive the instrument will be
- fx fx send type (delay/reverb)

## Mixer shortcuts

To balance sounds in a mix, it may be easier to have access to all the instrument levels in a single screen, this is why there are some mixer shortcuts, and these can be accessed by pressing an encoder button.

### Level

Press encoder 1 to access the volume level of all 6 synthesis instruments.

Press encoder 4 to access the volume level of all 6 sample instruments.

L	BD	SD	TT	CP	CB	HH
100	127	75	127	70	100	

### Pan

Press encoder 1 twice to access the pan level of all 6 synthesis instruments.

Press encoder 4 twice to access the pan level of all 6 sample instruments.

P	BD	SD	TT	CP	CB	HH
0	0	0	0	-58	+25	

### FX Send level

Press encoder 2 to access the FX send level of all 6 synthesis instruments.

Press encoder 5 to access the FX send level of all 6 sample instruments.

F	BD	SD	TT	CP	CB	HH
0	0	53	63	99	0	

## FX Send type

Press encoder 2 twice to access the FX send type for all 6 synthesis instruments.

Press encoder 5 twice to access the FX send type for all 6 sample instruments.

F	BD	SD	TT	CP	CB	HH
dly	rev	rev	dly	rev	dly	

## Instrument status (Mutes)

Press encoder 3 to access the on/off status of all 6 synthesis instruments.

Press encoder 6 to access the on/off status of all 6 sample instruments.

M	BD	SD	TT	CP	CB	HH
on	on	off	off	off	on	

# Effects | FX

## Delay

Stereo delay with a 2-pole lowpass filtered in the feedback loop.

Be careful with feedback and resonance settings, these can make the delay auto-oscillate.

```
DLY tim fbk      cut res
      64  95      79  70
```

- tim delay time
- fbk delay feedback
- cut filter cutoff frequency
- res filter resonance

## Reverb

A classic mono-in / stereo out plate reverb

```
REV pre tim dif cut dmp
      25  90 100 115  0
```

- pre pre-delay time (0-200ms)
- tim reverb decay time
- dif reverb diffusion
- cut input cutoff frequency
- dmp hi frequency damping

## Master FX unit

A multi effect unit on the master stereo bus with drive, samplerate reduction, bitrate reduction and a 2-pole lowpass filter

```
MFX drv smp bit cut res
    10 15  0 100 80
```

- drv drive level
- smp samplerate reduction level
- bit bitrate reduction level
- cut filter cutoff frequency
- res filter resonance

## Loading / saving a patch

### Load menu | LOAD

Press Load if you want to load a pre-programmed patch from your DoubleDrummer's memory.

```
Load program <<< >>> pgm
InUrFace                1
```

Turn encoder 6 to quickly navigate and load thru the patches.

Press encoder 4 to select the previous patch.

Press encoder 5 to select the next patch.

Press LOAD again to load the patch into the edit buffer.

Press HOME to cancel

*Tip: Loading a sound and then canceling the load action can be used as a compare function*

### Save menu | Save

In this menu you can save your edited patch to the DoubleDrummer's memory.

```
Save program <<< >>> pgm
[I]nUrFace >Dubby      4
```

Turn encoder 6 to select the memory destination.

Press encoder 4 to select the previous patch.

Press encoder 5 to select the next patch.

Use encoders 1 and 2 to edit the patch name.

Press LOAD to confirm the save action.

Press HOME to cancel.

# System settings | System

These settings are global to the DoubleDrummer, and will be auto-saved when you turn it off

## System settings - page 1

```
in mid lay str ctr out  
din 1 k25 36 p+m thr
```

- in MIDI data input (5-pin DIN | USB)
- mid Receiving MIDI channel (1 to 15)
- lay Midi input note assignment layout (see following chapter)
- str MIDI input note layout start note (default 36)
- ctr MIDI CC control mode  
prm: parameter mode on 1 MIDI channel  
mix: mixer mode on 1 MIDI channel  
p+m: parameter + mixer on 2 MIDI channels
- out MIDI out mode (thru | cc)

## System settings - page 2

```
ui enc tdl  
16 7 0
```

- ui “popup” helper window hold time (0 to disable)
- enc encoder acceleration
- tdl trig delay time (in ms)

## About the trig delay time (tdl parameter)

*This parameter should be always set to 0, unless you want to achieve a specific result.*

This parameter will delay all incoming triggers. It can be used with sequencers that send CC automation AFTER the note data (such as Elektron Octatrack when parameter locking or automating note data and CC data on the same step).

As the DoubleDrummer is waiting for parameter changes BEFORE the note data, this can be used to wait for eventual CC data before triggering the instrument.

If you need this behavior when using an Octatrack for example, set this parameter to 5 as a starting point (this should allow about 5 CC's before the instrument is triggered).

# MIDI Note Map – MIDI note input layouts

For your convenience, different MIDI maps or layouts are available (see System settings – page 1 to select the one you want to use).

All 12 instruments use the same MIDI channel (set in System settings – see system menu page), and they are triggered with different MIDI notes.

*The following tables assume that the MIDI layout start note parameter (str) is set to 36. If different from 36, the tables will be shifted according to the str parameter (and as a consequence, the white/black keys in the following table won't correspond with the associated instrument).*

## Standard layout

GM-ish layout. Same as Alt layout (see below) but with S1 set a semitone below BD (if str is 36, then S1 is triggered by note 35).

## Alt layout

Similar as the standard layout but all instruments can be played with a 2-octave keyboard

BD	S1	SD		S2		HH	LT	HH	MT	OH	HT		S5		S6		S3		CB		S4		
36	37	38		40		42	43	44	45	46	47		49		51		54		56		58		

## K25 layout

Uses all the whites keys of a 25-note keyboard (now the default choice)

BD		SD		LT	MT		HT		CP		CB	HH		OH		S1	S2		S3		S4		S5	S6
36		38		40	41		43		45		47	48		50		52	53		55		57		59	60

## Chromatic layout (chr)

The name says it all. Great to get all triggers on a 16-note row like on the Elektron Octatrack.

BD	SD	LT	MT	HT	CP	CB	HH	OH	S1	S2	S3	S4	S5	S6										
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50										

## Pad layout

Optimized for 16-pad controllers (bottom left pad = note 36 to top right pad = note 51). Depending on your controller, you might have to change the str parameter.

51

S4	S5	S6	
HT	MT	LT	CB
S1	S2	S3	OH
BD	SD	CP	HH

36

39

## Beatstep Pro layout (bsp)

Optimized for Beatstep Pro (GoTo Device Settings in Arturia MIDI Control Center and set Drum Map to Chromatic Mode).

Str parameter in settings menu has to be set to 36 for this to work correctly.

S1	S2	S3	S4	S5	S6		OH
BD	SD	LT	MT	HT	CP	CB	HH

## MIDI CC map

The MIDI CC mapping is available as a separate pdf file.

Note that ss DoubleDrummer has more parameters than the available number of MIDI CC's, 3 different CC maps are available for your convenience, depending on what you want to control (see System menu).

## Cheat codes available at startup

Some hidden functions are available when powering the DoubleDrummer while pressing some buttons for 2 seconds:

### Factory Reset

Hold Shift + System at power up until the factory reset menu appears.

Performing a factory reset will erase all presets/settings with the provided factory ones, so don't forget to save your custom patches before doing this.

## Firmware update / User samples upload

The procedure to update the firmware and upload custom samples to the DoubleDrummer is documented and maintained on the website.

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