

## DARK FADER TT – CUSTOMIZING



Dark Fader TT offers a powerful built in 'Power-On Configuration Setup' to customize individual user needs.

To activate the configuration setup: Press and hold a dedicated **BUTTON** during Power-On (USB connection).

Once in setup mode, the **FADER** is often used as an input parameter to select a new value, typically in 9 steps (aligned to main positions on scale).

Any changes in setup get stored permanently and will be loaded automatically on next Power-On.

### CUSTOMIZE THE **DECK ASSIGNMENT A/B/C/D**

Dark Fader TT is per default a full 4 deck controller, user can toggle with the **DECK** button (top central button) with 4 clicks thru all decks A>B>C>D (MIDI channel 1-4). Some user only need 2 decks, or even want to assign the controller to a dedicated deck always, allowing use of the **DECK** button as a free control to trigger any user defined DJ app actions in own mappings.

So we made the **DECK** button behaviour most flexible, example: 2 deck users might customize the button to toggle between A and B only with one click, or user with two Dark Fader TT can customize the controller differently (e.g. A/C on left and B/D on right controller). This concept is most flexible, also avoiding the need of modified mappings. Customized controller can use one mapping for all use cases.

The **DECK** button offers 9 modes: 4 fixed assignments (A, B, C, D), 4 modes for 2 decks (AB, AC, BD, CD) and 1 full 4 deck mode (ABCD). The mode 9 (ABCD) is the default setting, here the workflow in case you want to customize Dark Fader TT to 2 decks or 1 fixed deck assignments:

- Disconnect device ⇒ Press & hold the **DECK** button (top central button) ⇒ connect device (Power On).
- Still holding **DECK** button ⇒ use the **FADER** now to select one of the 9 deck assignment modes.
- **LED Feedback**: The 2 LEDs close to the **DECK** button are oscillating, simulating the new **DECK** button toggling. Try it once! - it sounds complicate but you will get the idea immediately.
- Release the **DECK** button ⇒ Done; the new deck assignment is stored (or still hold the button and disconnect Dark Fader TT if you want to keep the older assignment).

### CALIBRATE **FADER MID POSITION**

This may be one of the most important settings. Each fader has deviations on mid green position. A calibrated fader should send MIDI mid position and toggling LED to green exactly at the mid (zero) position of the pitch scale. Some folks may know: In older Technics SL days we had to open the chassis and readjust a trimpot to calibrate the exact zero position. Dark Fader TT allows a new calibration much easier: Use the procedure below to calibrate the exact mid position once, the new position will be stored permanently. We did this on your Dark Fader TT already, but you can repeat the procedure by your self at any time. It has to be done (mandatory) again as soon you **RESET** to factory settings.

Workflow to calibrate exact fader mid position:

- Disconnect device ⇒ Press & hold the **SHIFT** button (central bottom) ⇒ connect device (Power On).
- Still holding **SHIFT** button ⇒ Move the **FADER** now to exact zero mid position on pitch scale.  
Tip: move the fader a bit back and forth around mid to compensate any mechanical resistances.
- Release the **SHIFT** button (when fader is in exact mid) ⇒ Done; the new mid position is stored.

### CUSTOMIZE **FADER MID RANGE SIZE**

The fader LED switches to green when close to the zero zones. You can define how large this zone should be. A huge zone has pro's and con's. Pros: easy to find pitch zero position (without using pitch reset), cons: increasing of the dead area close to the mid position. Dark Fader TT allows you to define your favourite behaviour: Large range (similar the old 'click' versions in SL-1200mk2), or even smaller areas. Friends of the SL1200mk3 may want to remove the dead area at all, using the pitch knob only to reset the pitch and get the LED green. Dark Fader TT allows all these behaviours.

Define you favourite behaviour once, using this workflow:

- Disconnect device ⇒ Press & hold the **LEFT** button (left below fader) ⇒ connect device (Power On).
- Still holding **LEFT** button ⇒ Move the **FADER** to a certain position (9 levels are possible).
- Hint: You will not get a direct feedback during customizing; the **FADER** is used as input parameter now for the green mid range size after customizing. Lowest end: removing green dead zone completely, highest position: defining a large green range. Default is mid position (small green area).
- Release the **LEFT** button ⇒ Done; the new fader mid range size is stored permanently.
- Test the new size in normal mode. Repeat the customizing in case you need a larger or smaller size.

### ENABLE/DISABLE **FADER PITCH RESET (ZERO LOCK) FEATURE**

Most users prefer Dark Fader TT with the modern clickless pitch fader version from Technics SL1200mk3 (or later). Clickless means: without snapping in zero position. That's why we added the **PITCH RESET** feature, simulating the Technics **PITCH LOCK** button (via **SHIFT** + **DECK** together).

This feature is enabled by default. You can disable this feature in case you need a free **DECK** button on **SHIFT** layer instead (for own DJ app mappings).

Here the workflow to enable/disable the PITCH RESET LOCK features:

- Disconnect device ⇒ Press & hold **SHIFT + DECK** buttons together ⇒ connect device (Power On).
- Still holding both buttons ⇒ LED Feedback: The fader LED shows the current PITCH RESET feature: GREEN if enabled, RED if disabled. Disconnecting the device (still holding buttons) will keep this mode.
- Releasing the buttons ⇒ will toggle the feature status (enabled / disabled).

## ENABLE/DISABLE **FADER MIDI SOFT TAKEOVER (MSTO)**

Dark Fader TT offers an inbuilt hardware MIDI Soft Takeover feature on fader movements after deck change (MIDI channel change). This ensures that the tempo will not jump abruptly in your DJ app.

Principle of a typical MSTO Workflow: After DECK change (MIDI channel) the fader stops sending any MIDI messages (because the physical fader position would not match to the fader deck position in the software). MSTO ensures that fader movements get ignored (waiting mode) until user moves the fader position close to the last used position on this deck. This catches the fader and activates them again.

Background why we added this feature: Most DJ applications also offer software MSTO in their MIDI settings, but their features are often limited (e.g. Traktor Pro struggles with MSTO on different MIDI channels). Using the Dark Fader TT MSTO allows overcoming such DJ application limitations. And the hardware MSTO offers one nice features on top: The LED gives you a feedback when the fader is in MSTO waiting mode (LED off means: your fader is in MSTO waiting mode, until you catch manually the last used position). Typically your DJ app MSTO is no longer needed, but you can keep them still on.

You can disable this MSTO feature in case you want force Dark Fader TT to fire MIDI messages always. Use the procedure below to enable or disable MSTO:

- Disconnect device ⇒ Press & hold **SHIFT + RIGHT** buttons together ⇒ connect device (Power On).
- Still holding both buttons ⇒ LED Feedback: The fader LED shows you the current MSTO mode: GREEN if enabled, RED if disabled. Disconnecting the device (still holding buttons) will keep this mode.
- Releasing the buttons ⇒ will toggle the feature status (enabled / disabled).

## CUSTOMIZE THE **FADER SENSITIVITY FOR SMALL MOVEMENTS**

Faders are analogue elements. Dark Fader TT converts the signal into a high 14bit resolution to create a 14bit MIDI pitchbend command. But 14bit on 100mm means that noise would produce ghost MIDI commands even if you do not touch the fader. So we integrated an intelligent noise reduction algorithm to keep the high resolution on smallest movements, but avoiding self fired ghost MIDI messages.

You can calibrate the noise reduction level that works best for you. Dark Fader TT easily shows you if your noise reduction level works well: Normally the fader LED is switched off. As soon you move the fader you see the red LED flashing, each flash means a MIDI message has been sent. Sometimes you may see a short red flash even if you do not touch the fader. This is absolutely ok and indicates that Dark Fader TT works in highest resolution. In case the red LED is flashing more often (e.g. each second) then you should set the noise reduction higher. Or explaining the other way around: If you feel that small movements with your finger do still not fire any messages then you should calibrate your fader to be more sensitive (reducing the noise reduction). Customize your favourite sensitivity with this workflow:

- Disconnect device ⇒ Press & hold the **RIGHT** button (right below fader) ⇒ connect device (Power On).
- Still holding **RIGHT** button ⇒ move the **FADER** to any position, the LED flashes on movements.
- LED Feedback: The **FADER** is used to define the level of noise reduction (9 steps): From lowest end (no noise reduction, multiple ghost messages) to top (maximum noise reduction but low sensitivity).
- Workflow to find best position: Start on lower end and move the **FADER** slowly higher. At a certain position the LED flashes less often. Now increase again until the LED is off always (wait e.g. 20 seconds to check if any flash appear). This is best position (no ghost messages, most sensitive).
- Release the **RIGHT** button ⇒ Done; the new fader sensitivity (and noise reduction) is stored.

One additional hint: You typically won't be able to increase/decrease the tempo bpm display in your DJ app in single hundredths (e.g. from 128.45 to 128.46), even not with best-of-class fader like the SL1200. Reason: DJ apps digitally 'calculate' bpm values, the only 'true' values are the exact mid and min/max positions. Analogue faders via MIDI are not intended as 'digital counter'. So do not try to customize your fader sensitivity to force 1/100 steps, it's more important to define a small pitch range in your DJ app (8% or 4%). In our experience a well calibrated analogue fader supports 0.02 - 0.03 steps in 8 or 4% range. Dark Fader TT firmware sends an exact mid value always (independent sensitivity), to ensure that e.g. a 128 bpm song is exactly displayed as 128.00 bpm when the fader is in zero position (LED green).

## CUSTOMIZE THE **JOGWHEEL ROTATE SENSITIVITY**

The jogwheel is an analogue element too, we converted to a high 10bit resolution (about 1.000 steps per 360° turn), more precise than a finger can trigger on the small knob. We integrated a similar intelligent noise reduction algorithm as we did with the fader, so we could keep this high resolution on small movements and avoiding self fired ghost MIDI messages.

The Default value should work well already. If you feel that small movements with your finger do not fire any messages (means the sensitivity is too low) or the jogwheel LED (right below jogwheel) flashes often itself (sensitivity too high) you can calibrate and customize the Sensitivity with this workflow:

- Disconnect device ⇒ Press & hold the **BANK** button (right top button) ⇒ connect device (Power On).
- Still holding **BANK** button ⇒ rotate the jogwheel (see flashing right jogwheel LED).
- LED Feedback: The **FADER** is used now to define the level of noise reduction (9 steps): From lowest end (high sensitive but multiple ghost messages) to top (low sensitivity on small rotations). Default is fader mid. Try the 9 fader positions and test the jogwheel response. Tip: Test complete 360° turns as the jogwheel is more sensitive in certain angles.
- Release the **BANK** button ⇒ Done; the new jogwheel sensitivity is stored.

Additional hint: The jogwheel rotate sensitivity setting is NOT intended to modify the 'speed' or acceleration of the jogwheel. The speed is defined in the mapping file or DJ application settings.

## CUSTOMIZE THE JOGWHEEL TOUCH SENSITIVITY

The Setup does not offer any customizing of the TOUCH sensitivity – WHY?: Because not needed :)

Background: We implemented a fully automated 'AUTO CALIBRATION' in the firmware, to ensure most reliable TOUCH recognition of finger tips. The jogwheel works clickless, using the capacitive touch technology of metal knobs. Capacitive sensors are dependent from various environment parameters like temperature, humidity, USB power etc – parameters which change over the time (even during the mix). So we implemented a TOUCH recognition calibration to neutralize such impacts. The auto calibration is working in background, triggered from multiple events, examples: Initially on Power-On, also timer triggered (each 15 minutes) and when the user is pressing the DECK button.

That's also the reason why you should not touch the jogwheel when you connect the Dark Fader TT, also not touching when you press the DECK button. This ensures that the auto calibration measures the 'empty' value (without finger). If you ever feel during the mix that the TOUCH is not working best, then press the DECK button once, this forces a new calibration (during the mix).

## CUSTOMIZE THE VINYL BUTTON TOGGLE MODE

We added this feature on user requests. The VINYL button works per default like a LATCHING switch. Some user prefer a MOMENTARY behaviour, means keeping CDJ mode always and activating VINYL mode only as long the button is hold. This helps avoiding any accidentally 'holding music by finger tip'.

Use the procedure below to enable or disable the VINYL button MOMENTARY mode:

- Disconnect device ⇒ Press & hold the **VINYL** button (left upper button) ⇒ connect device (Power On).
- Still holding VINYL ⇒ Feedback: The fader LED shows you the current toggle mode: RED on LATCHING (default), GREEN if MOMENTARY is enabled. Disconnecting the device will keep current mode.
- Releasing the buttons ⇒ will toggle the VINYL button mode (MOMENTARY enabled / disabled).

## RESET DARK FADER TT AND RESTORE FACTORY SETTINGS

Reset will remove all your calibration adjustments and restore the default factory setting:

- Disconnect device ⇒ Press & hold **LEFT + RIGHT** buttons together ⇒ connect device (Power On).
- Releasing the buttons ⇒ Done; user customizing removed, device works with original factory defaults.
- Keep in mind that typically the FADER MID POSITION has to be customized once again after RESET.

## DARK FADER TT – MIDI CHART

MIDI SEND				
CONTROL ELEMENT	BANK 1		BANK 2	
	NORM (LAYER1)	SHIFT (LAYER2)	NORM (LAYER3)	SHIFT (LAYER4)
DECK (Central Top Button)	[DECK] + <b>CC 20</b>	[PITCH0]   <b>CC 24</b>	<b>CC 110</b>	<b>CC 114</b>
JOG Rotate (HiRes jogwheel messages, approx. 600 TPT)	CDJ: <b>CC 27</b> VINYL: <b>CC 28</b>	-	-	-
JOG Rotate (20 TPT Encoder)	-	<b>CC 104</b>	<b>CC 105</b>	<b>CC 106</b>
JOG Touch	<b>NOTE 01</b> (in VINYL only)	<b>NOTE 02</b> (always)	<b>NOTE 03</b> (always)	<b>NOTE 04</b> (always)
SL1200 FADER	<b>PITCHBEND</b> (0xE, 14 bit) + <b>CC 09</b> (0xB, 7 bit)			
VINYL (Upper Left Button)	VINYL + <b>CC 85</b>	<b>CC 89</b>	<b>CC 107</b>	<b>CC 108</b>
BANK (Upper Right Button)	BANK + <b>CC 86</b>	<b>CC 90</b>	BANK + <b>CC 86</b>	<b>CC 109</b>
Lower Left Button	<b>CC 21</b>	<b>CC 25</b>	<b>CC 111</b>	<b>CC 115</b>
Lower Right Button	<b>CC 22</b>	<b>CC 26</b>	<b>CC 112</b>	<b>CC 116</b>
SHIFT (Central Bottom Btn.)	SHIFT + <b>CC 23</b>		SHIFT + <b>CC 113</b>	

- Buttons send CC (Control Change 0xB, 127/0), jogwheel sends CC 27 or 28 (accelerated values 32-96) with high TPT (Ticks Per Turn) in layer 1, simulating encoder CC (val. 63/65) in layer 2-4 with 20 TPT
- TOUCH on jogwheel knob sends MIDI Notes (NoteOn 0x9, value 127/0) to support also limited DJ Apps. CDJ mode prevents sending Note 01 in layer 1, layer 2-4 send Notes 02-04 always
- SL1200 fader sends 14 bit PITCHBEND (0xE) and 7 bit CC 09 (0xB) to support Apps beyond DJ'ing
- RED marked messages are free for user favourite mappings, BLACK colored CC (85, 86, 23, 113) could be mapped too (but controller is using those buttons for internal features). CC 20 is typically mapped if DECK toggling is disabled in Power On setup. CC 24 is send only if PITCH RESET is disabled
- Dark Fader TT does not receive any MIDI messages, all LED's are automatically firmware controlled

