Konnekt Live

User's Manual

English Version

IMPORTANT SAFETY INSTRUCTIONS

The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1 Read these instructions.
2 Keep these instructions.
3 Heed all warnings.
4 Follow all instructions.
5 Do not use this apparatus near water.
6 Clean only with dry cloth.
7 Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11 Only use attachments/accessories specified by the manufacturer.
12  Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13 Unplug this apparatus during lightning storms or when unused for long periods of time.
14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Warning!

- To reduce the risk of fire or electrical shock, do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
- This apparatus must be earthed.
- Use a three wire grounding type line cord like the one supplied with the product.
- Be advised that different operating voltages require the use of different types of line cord and attachment plugs.
- Check the voltage in your area and use the correct type. See table below:

Voltage	Line plug according to standard
110-125V	UL817 and CSA C22.2 no 42.
220-230V	CEE 7 page VII, SR section 107-2-D1/IEC 83 page C4.
240V	BS 1363 of 1984. Specification for 13A fused plugs and switched and unswitched socket outlets.

- This equipment should be installed near the socket outlet and disconnection of the device should be easily accessible.
- To completely disconnect from AC mains, disconnect the power supply cord from the AC receptacle.
- The mains plug of the power supply shall remain readily operable.
- Do not install in a confined space.
- Do not open the unit – risk of electric shock inside.

Caution:

You are cautioned that any change or modifications not expressly approved in this manual could void your authority to operate this equipment.

Service

- There are no user-serviceable parts inside.
- All service must be performed by qualified personnel.

EMC / EMI & CERTIFICATE OF CONFORMITY

EMC/EMI
This equipment has been tested and found to comply with the limits for a Class B Digital device, pursuant to part 15 of the FCC rules.
These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For Customers in Canada:
This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Certificate of Conformity
TC Electronic A/S, Sindalsvej 34, 8240 Risskov, Denmark, hereby declares on own responsibility that the following product:

Konnekt Live

that is covered by this certificate and marked with CE-label conforms with following standards:

EN 60065 (IEC 60065)	Safety requirements for mains operated electronic and related apparatus for household and similar general use
EN 55103-1	Product family standard for audio,video, audio-visual and entertainment lighting control apparatus for professional use. Part 1: Emission.
EN 55103-2	Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2: Immunity.

With reference to regulations in following directives:
73/23/EEC, 89/336/EEC

Issued in Risskov, April 2007
Mads Peter Lübeck
Chief Executive Officer

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INTRODUCTION

Congratulations on your purchase of the Konnekt LIVE
To call Konnekt Live an intriguing interface for live performers is merely scratching the surface. Whereas most audio interfaces on the live laptop performance scene are designed for recording purposes TC Electronic's interface raises the bar and offers clear-cut playback advantages to live laptop performers.

Imagine a master compressor, a Finalizer that puts you in full control of your output. Add to that Konnekt Live's extensive output routing that enhances the audio passing through via its optimized analog output section. Bundled with Ableton Live software and a suite of built-in DSP effects, you won't find a more versatile interface for your live performance.

Typically, real-time, high quality output processing puts heavy demands on your CPU. Not so with Konnekt Live. Since all DSP processing takes place inside Konnekt Live, all you have to worry about is being creative - your computer is left with plenty of headroom for other tasks.

Konnekt Live - studio-quality output, road-sturdy control and unsurpassed DSP effects for the digital artist

Studio-quality sound
At its most basic, the sound quality of Konnekt Live takes your performance to the next level. Whether you run pre-recorded tracks, effects, plug-ins or live inputs through it, Konnekt Live easily outperforms other audio interfaces, compact mixers or budget rack units on the scene. You can think of this interface as a high quality yet compact mixer that integrates perfectly with balanced or unbalanced systems, big PA rigs and active speaker systems alike.

DSP effects inside
Konnekt Live houses a suite of advanced effects, including DSP, under its hood that were designed with your toughest performance requirements in mind. The effects quality so far only known from recording studios is now within reach for your live setup.

Fabrik C Live
Compression with extensive output options – the perfect Finalizer for any venue. Its unique MINT (Meta Intuitive Navigation Technology) user interface allows you to respond intuitively to what you hear, taking the bore right out of tweaking tons of parameters and settings

Fabrik R Live
Add up to 9 classic reverb algorithms for breathtaking effects and vocal reverb on loops, pre-recorded tracks, live vocals, instruments or keyboards

ResFilter
Lo-cut/hi-cut filter that offers you ultra fat filtering effects. Throw in resonance, 6, 12 and 24 slopes for even more stunning sounds. Its inter-communication-bus facilitates controlling and tweaking multiple plug-ins and parameters from one plug-in, cross-fading between two plug-ins etc.

KONNEKT LIVE FEATURES

Sturdy design
Its sturdy, road-ready casing is designed for the rigors of live performing and the life on the road. It fits right under your laptop and its heavy rubber frame serves as a solid grip on tilted or slippery surfaces allowing this baby to take a serious amount of gravitational punishment before it gives in to the laws of physics.

Versatility
If you crave that old school touch, stay tuned: Konnekt Live comes with a turntable cable and an on-board RIAA plug-in. The selection of RIAA filters gives you studio-quality vinyl ripping to mix in with your own music or mash-ups. Konnekt Live's MIDI I/O allows you to plug an external MIDI controller right into the loop without a USB MIDI interface. Assign the front panel light ring as a MIDI controller for tweaking optional parameters if you like to loop in a more tangible grip of things.

- Outstanding IMPACT™ mic pre-amps
- True Hi-Z inputs
- Front panel control of internal mixer parameters
- Analog volume control for perfect integration with powered speakers
- Network up to 4 units via the TC NEAR™ 1394 FireWire based network to get more inputs, outputs and effects channels
- Full feature direct monitoring – With effects and also between networked units
- Intuitive control panel with automatic input detection
- 3 DSP programs for total recall of internal routing, mixer and effects settings
- XLR to RCA jacks with RIAA filter for direct connection of turntable
- FireWire bus powered
- DICEII digital interface chip with JETtm Jitter Elimination Technology
- Low latency drivers: WDM, ASIO and CoreAudio (including Intel Macs)
- Dual headphone outputs, one with auto speaker muting
- 24-bit/192kHz sampling rate
- Sample accurate MIDI
- 14/14 I/O: 2 mic/inst/line, 2 line inputs and 4 line outputs, 8 ADAT and 2 S/PDIF (optical and coaxial) inputs and outputs
- Built-in real-time DSP effects; Fabrik R Live reverb and Fabrik C Live channel strip based on MINT™
- VST integration of Fabrik R Live and Fabrik C Live
- Native ResFilter included
- Assimilator Konnekt included
- Ableton Live 6 TC Electronic edition included
- Built-in Tuner displayed both via TC Near Control panel and front panel lightring.

QUICK SETUP GUIDE

Up and running in 10 minutes

This quick-guide will help you set up the Konnekt Live in a typical application. For further details please refer to later sections of this manual.

Unpacking

- Open the box from the top and remove cabling.
- Lift out styrofoam insert, then using both hands lift out Konnekt.
- Remove plastic bag from Konnekt.
- Inspect your Konnekt for signs of transit damage.
- In the unlikely event of this having occurred, inform the carrier and the supplier.
- Keep all the packaging if damage has occurred, as this will show evidence of excessive handling force.
- It is also a good idea to keep the packaging if possible for future transportation.

Check contents

The package should contain the following items:

- Konnekt audio interface
- Power supply
- FireWire cable
- XLR to RCA jacks for connecting a turntable
- CD with software etc.
- Safety Instructions

Computer Requirements

Mac OS

- PowerPC (1 GHz or faster) or Intel CPU
- 256 MB RAM
- FireWire (IEEE 1394) port*
- OS X 10.3.9

Windows

- Pentium 4, 1.6 GHz or faster
- 256 MB RAM
- FireWire (IEEE 1394) port*
- Windows XP

* We recommend running Konnekts on a dedicated FireWire bus. If your computer has one or more FireWire connections on the chassis they will typically run on the same FireWire bus. You may connect the Konnekt to one of these. If you intend to run more FireWire devices simultaneously, such as e.g. an external hard drive, we recommend running this device on a separate bus.
This would typically be on an installed FireWire PCI card. Note that such a FireWire PCI card typically has 3 ports but these also operate on a single bus.

Software installation

- We recommend installing the software before connecting the Konnekt.
- Refer to the **Konnekt Installation Guide** supplied in the package and on the Konnekt CD.
- If you are familiar with software installation procedures in general you may simply insert the accompanying CD-ROM in your computer's CD drive and follow the instructions.

TC Near control panel

If Konnekt drivers are installed correctly you are able to open the TCNear control panel.

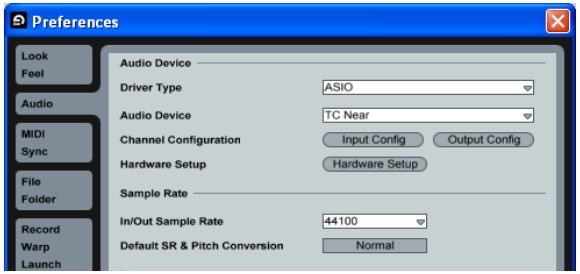
On Windows computers:
Press: Start/Programs/TC Electronic/TC Near
The TC Near can also be accessed via the Windows Control panel.

On Mac computers:
/Applications/TC Near
You may also start the application from System Preferences.

Konnekt Live comes with a special edition of Ableton Live for TC Electronic. The following is a quick reference guide to setting up Konnekt Live with Ableton Live. For instructions on using Ableton Live please refer to the reference manual for Ableton Live integrated within the program.

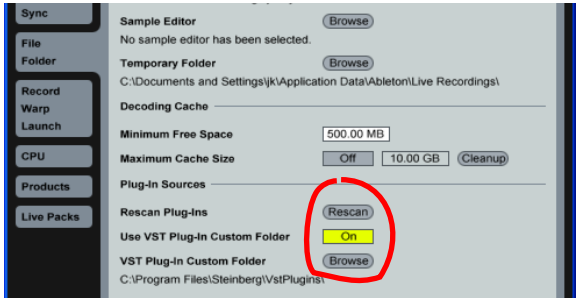
- Install Ableton Live from the CD.
- Open Ableton Live.

- Go to: Options/Preferences/Audio.



In this menu - select ASIO as driver type and TC Near as Audio Device.

- Go to: Options/Preferences/File Folder

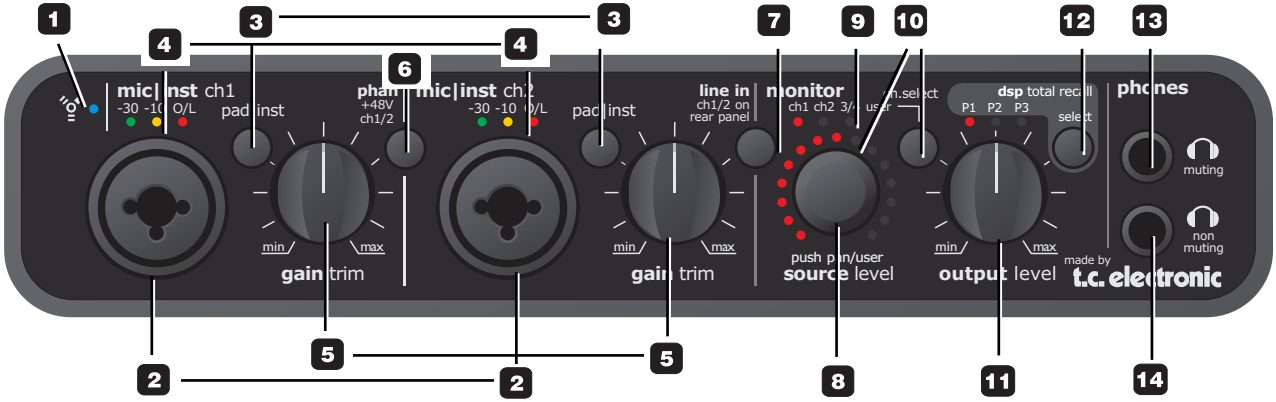


- Set the “Use VST Plug-Ins Custom folder to “on”.

Note that if you have created and installed your VST plug-ins in a different folder than the default, you must browse and select that folder first.

- Konnekt Live is now setup as the default audio device for Ableton Live and Ableton Live is setup to use Fabrik C Live, Fabrik R Live, ResFilter and Assimilator Konnekt.

FRONT PANEL OVERVIEW



1 FireWire/Power LED indicator
When Konnekt is hooked up via FireWire, the blue LED can indicate the following:

Steady lit: Sufficient power
Flashing: Uploading firmware, hardware error or FireWire communication error.
Off: The Konnekt has no connection to the driver, maybe because the driver is not installed.

2 Mic/Inst ch1/ch2 on Combo XLR/Jack
Combo XLR/Jack inputs. Both XLR and 1/4 inch jack can be used with this connector.

The XLR connection (balanced)
Connect a microphone and your signal is processed via the IMPACT™ mic pre-amps.

- For condenser microphones activate phantom power. see also (6) on the following page.
- The Input LEDs (4) indicate the level of the input signal. If the red O/L LED (overload) is lit, your signal is too “hot” and you should press “PAD/INT” to attenuate the signal by 20 dB.

The 1/4 jack connection
- Press PAD/INST to activate this circuit.

The 1/4 “jack part” of the connector is a high quality Hi-Z circuit that is designed especially for connecting a passive guitar pick-up system (e.g. Strat-type) directly.

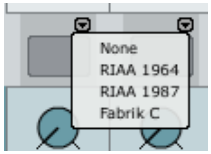
The jack inputs on the front panel are unbalanced. If you wish to connect balanced equipment using TRS jacks you should connect via the line inputs on the rear panel.

NOTE **Important!**
If you use the 1/4 jack part of the Combo jack/xlr connection PAD/INST must be set to “in” position.

Connecting a turntable
A turntable can be connected to the Mic/Inst inputs by using the supplied RCA to XLR cable. With a turntable connected a RIAA filter must be inserted.

FRONT PANEL OVERVIEW

Both RIAA 1964 and RIAA 1987 formats are supported. Select between the two RIAA formats via the mixer page.



RIAA filter 1964
The RIAA filter 1964 gently enhances the low-end frequencies with 6 dB per descending octave. The high end frequencies are attenuated also with 6 dB per octave. Around 1 kHz the level is left untouched.

RIAA filter 1987
The RIAA 1987 is a variation of the original 1964 filter. In this type a soft cut in the low-end frequencies has been added to reduce rumble and acoustic feedback.

Depending on you specific application you may prefer one or the other.

NOTE RIAA filters are not available at 192 kHz.

3 Pad/Inst selectors
The PAD/INSTRUMENT selector can attenuate the input sensitivity by 20 dB. If you cannot attenuate the signal sufficiently using the GAIN/TRIM knob you should use the -20 dB position. This is typical when connecting line-level instruments.

Use PAD (out-position) when a turntable is connected via RIAA converter cables.

4 Input LEDs
Three input level indicators. -30 dB, -10 dB and 0 dB. First adjust the Gain Trim so the 0 dB LED is only lit at absolute peaks. Then reduce the Gain Trim slightly so the 0 dB LED is never lit.

5 Gain/Trim
Use this control to set the appropriate input level. (see previous paragraph).

6 Phantom Power +48V
The XLR part of the Combo XLR/Jack connections features +48V phantom power when this switch is pressed. Phantom power is used to power line-drivers and condenser microphones.

There are three main types of microphones

Condenser microphone - phantom power required except for some models that use proprietary power supplies or built-in batteries. Please check the microphone's manufacturer specifications for details.

Electrodynamic microphone - phantom power is not required but does no harm to the microphone.

Ribbon microphones - ***phantom power could damage the microphone. Search advice and documentation from the manufacturer of the microphone!***

Only the condenser type requires phantom power. It is however no problem combining a condenser microphone in e.g. ch. 1, with a standard electrodynamic microphones (such as e.g. a Shure SM57) in ch. 2. Nor is it any problem to activate phantom power and use a condenser microphone to one of the inputs and connect a guitar using a 1/4 jack to the other input, as phantom power only concerns the XLR connections.

7 Line In - ch 1/2 on rear panel
This switch alternates between using the front panel inputs or rear panel inputs for channels 1/2. Rear panel inputs are line inputs.

FRONT PANEL OVERVIEW

Connect a TV, a radio tuner or any secondary device that you don't use in music production to Line inputs 1/2 on the rear panel. Use the "Line In" switch to alternate between front and rear panel inputs.

8 Source Level (push to control Pan)
Controls the level or pan-position of the selected channel. The lightring shows the level or pan position of the selected channel.
By default the Source Level knob controls the source level of the selected channel. Press once and turn the knob to pan the signal. Leave the knob untouched for 1 second and it will automatically return to volume control function.

9 Monitor LEDs
Indicate which channel is monitored. Select channels using the Ch. Select button.

10 Ch. Select
The LED lightring around the SOURCE level knob indicates the source level of channel you have selected or the pan position if the Source Level knob (8) has been pushed.

Select between monitoring the following channels:

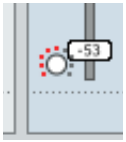
Ch 1 - Front or rear panel input channel 1*
Ch 2 - Front or rear panel input channel 2*

Select between channel 1/2 front and rear panel using the Line in switch on the front panel.

Ch 3/4 - Channels 3/4 on rear panel

User - The Setup page allows you to setup which channel/channels are monitored when "User" is selected. The options will vary depending on the connected devices.

It is also possible to assign a level control of a channel to the LED lightring via the Mixer page on the TC Near computer user-interface by pressing the lightring icon on the channel of your choice:



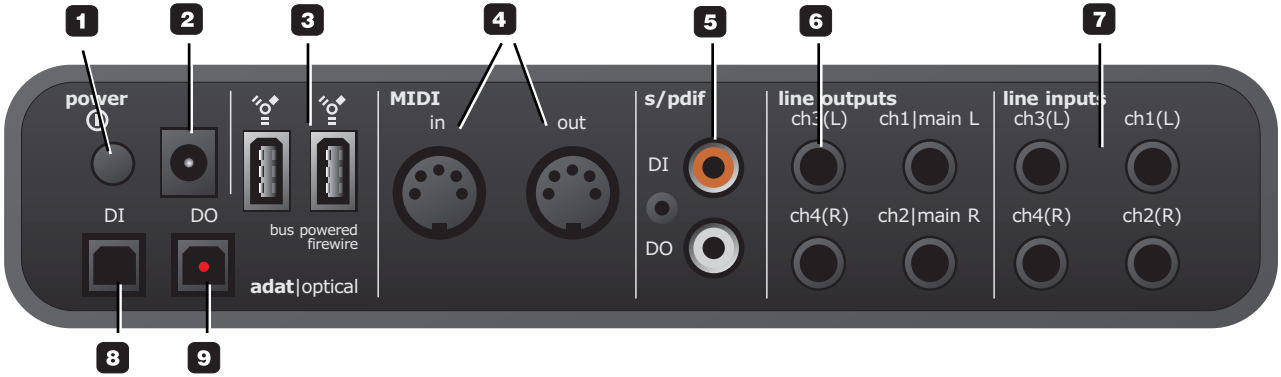
11 Output level
Sets the output level of analog outputs 1-2 and of the headphone outputs.

12 DSP Total Recall
Three program settings can be stored in locations P1, P2 and P3. These programs are total recall presets recalling settings from both mixer page, setup page and plug-in pages. Total recall of Fabrik plug-in settings does not apply when routing is set to plug-in mode.

13 Phones muting
Connect a set of headphones here. Main outputs will be muted.

14 Phones non-muting
Connect a set of headphones here. Signal is still passed to Main outputs.

REAR PANEL OVERVIEW



1 Power Switch
On/off switch for the unit.

2 Power In
Konnekt can be bus-powered from the computer's FireWire port. Check your computer's specifications. If more than one Konnekt is used or your computer delivers insufficient power on the FireWire port - use the supplied 12VDC power supply.

3 FireWire connectors
IEEE 1394 connectors for connecting to a computer and/or linking multiple Konnekt units. Konnekt can be bus-powered* from the computer's FireWire port. Check your computer's specifications.

NOTE *Before plugging the firewire connectors, make sure that plugs are positioned correctly.*

* Please read the section regarding bus-power on page 55.

4 MIDI In/Out
Standard MIDI in/out. MIDI out is automatically set to MIDI thru in stand alone mode.
When Konnekt is used in stand-alone mode, MIDI out always acts as MIDI thru.

5 Digital in/out - Coaxial S/PDIF
24 bit digital in/out on S/PDIF. In addition to standard I/O it is possible to insert e.g. an external digital effects unit and use this as a send effect.

6 Line Outputs (balanced)
1/4 inch jack outputs for:
- Main Left (ch 1) and Main Right (ch 2).
- Left (ch 3) and Right (ch 4)

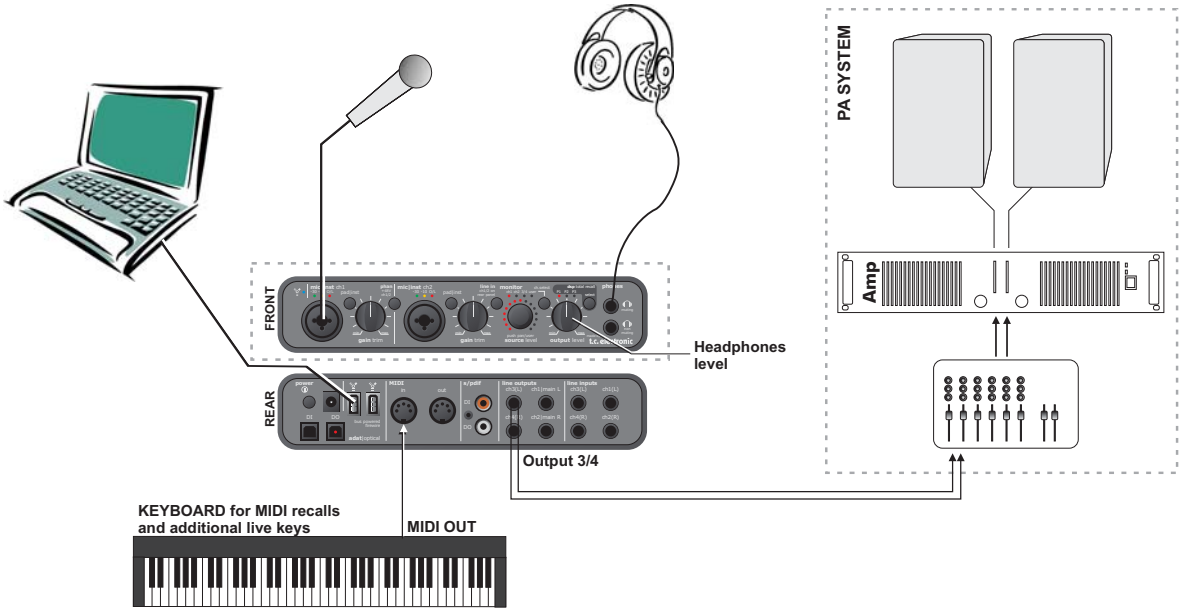
NOTE When connecting Main outs to a device (e.g. active speakers) with balanced inputs: "ground" and "cold" must be connected.
- On XLR type plugs this is pins 1 and 3.
- On Jack type plugs it is "sleeve" and "ring".

7 Line Inputs (balanced)
- Ch 1 (L)
- Ch 2 (R)
- Ch 3 (L)
- Ch 4 (R)

8 DI - Digital In
Optical S/PDIF or ADAT Toslink for up to 8 channels of digital in, depending on format and sample rate.

9 DO - Digital Out
Optical S/PDIF or ADAT for up to 8 channels of digital out.

SETUP EXAMPLES - "LIVE"



This example illustrates how Konnekt integrates perfectly in a live setup. The objects in a live setup could be:

Elements in this setup:

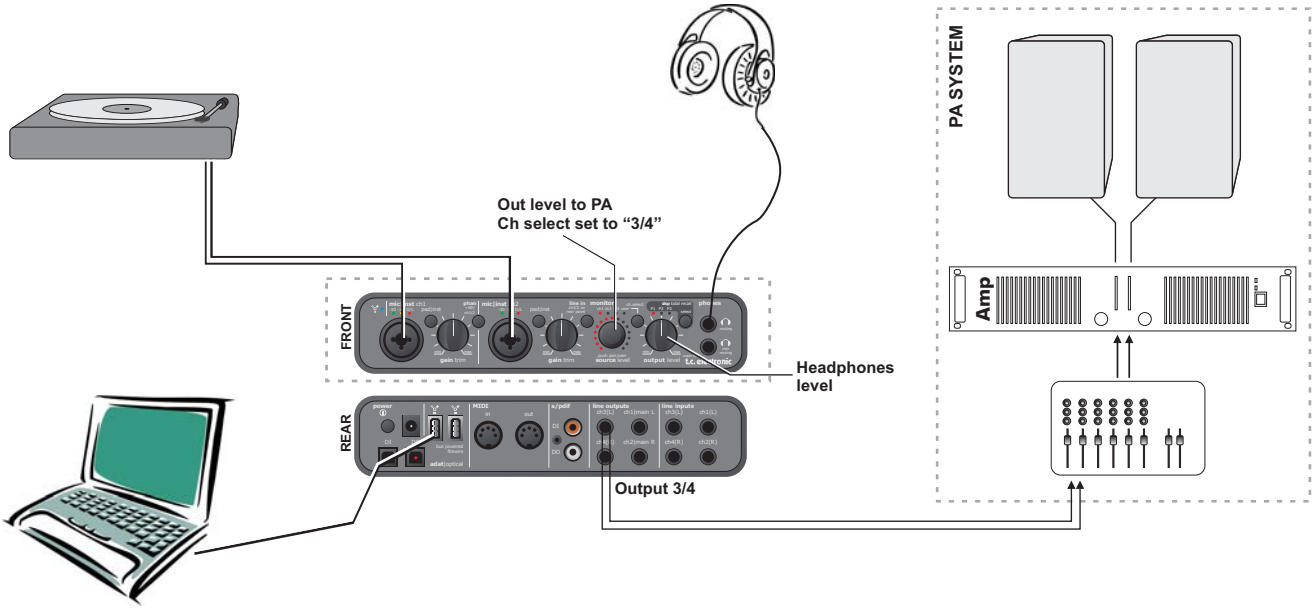
- DAW/laptop as source for playing audio-files.
- Headphones for undisturbed monitoring using the OUTPUT level control as separate headphones level.
- Microphone for vocals utilizing Konnekt IMPACT™ pre-amps and e.g. the Fabrik C channel strip.
- MIDI keys for additional keyboards and/or program changes.
- Distribution to PA (amp-speakers) using the SOURCE level control as separate level control.

Connect all devices according to the illustration above. Remember to activate phantom power if you are using a condenser microphone. Also note that outputs 3/4 in this setup are used as main outs to PA.

Advantage of this setup

This setup enables you to route different signals to the headphones and PA system via the DAW. This is useful for numerous purposes. E.g. for excellent cue monitoring for DJs as well as individual level control of the two signals.

SETUP EXAMPLES - TURNTABLE

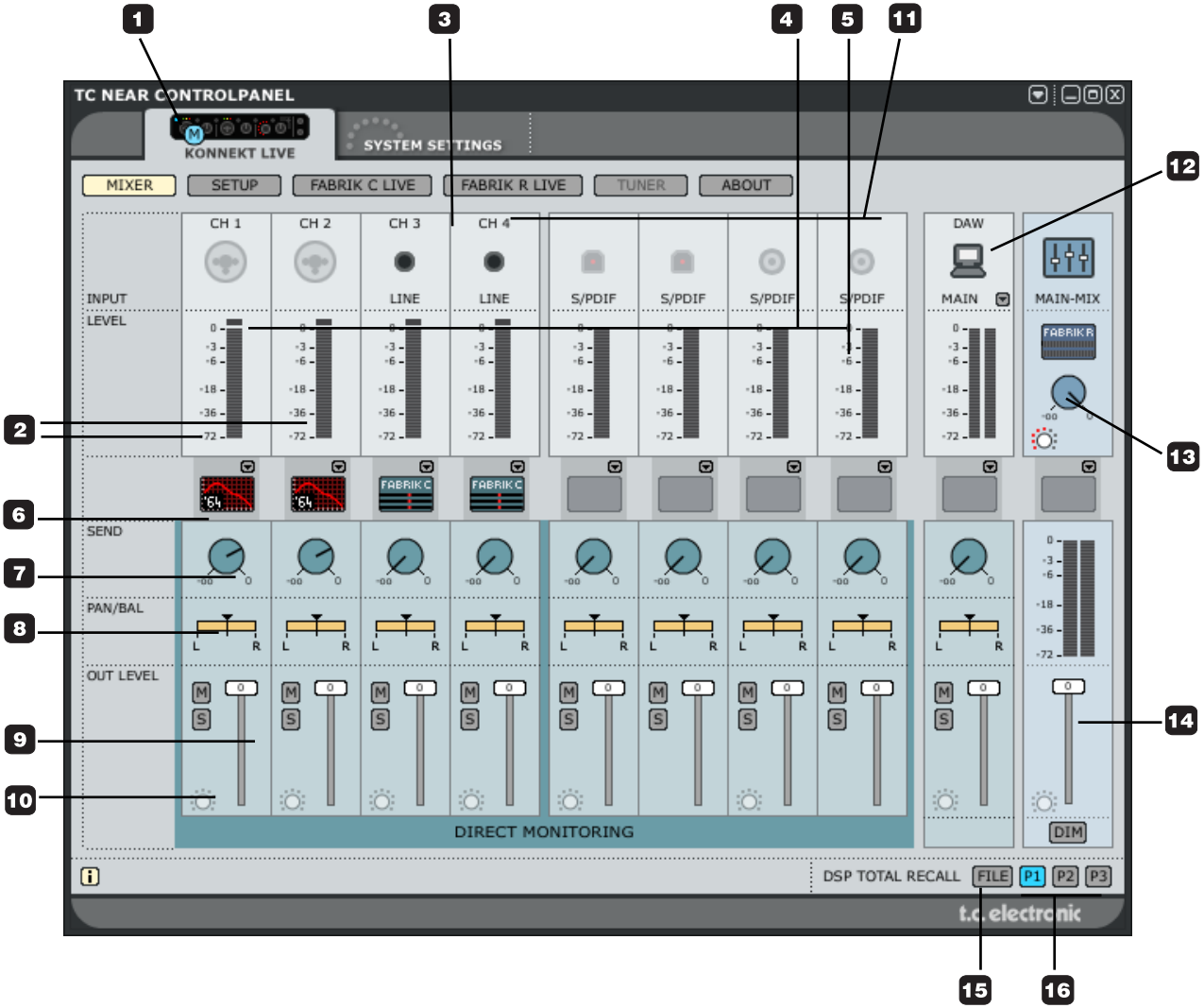


This example illustrates how a turntable can be connected to Konnekt Live using the supplied XLR to RCA cable.

Elements in this setup:
- Turntable for vinyl.
- DAW/laptop as recording device.
- Headphones for monitoring.
- Distribution to amp and speakers using the SOURCE level control as separate level control.

Connections
Connect all devices according to the illustration above.
- The turntable is connected to the XLR inputs on the frontpanel using the RCA to XLR cables.
- PAD/Inst selectors must be set in "out" (PAD) position.
- Select RIAA 1964 or RIAA 1987 via the TC Near Control panel.
- Outputs 3/4 are used as main outs to amp and speakers.

CONTROL PANEL - MIXER PAGE



CONTROL PANEL - MIXER PAGE

1 The Konnekt select tabs
Use the select tabs to switch between the Konnekts in your setup and the System Settings page.

Channels 1/2 & 3/4

2 Channels 1/2 - mono/stereo
The illustration on the previous page shows channels 1/2 in dual mono mode. The channels may be linked to one stereo channel via the Setup page. This will change the appearance of these channels. Please refer to the description of the Setup page on the following pages for details.

3 Ch1/Ch2 auto-sensing input
Channel 1/2 connections on the front panel are auto-sensing. They automatically detect whether you have connected an XLR (microphone) or 1/4" jack (instrument), and indicate this graphically.

These are the options


Nothing connected


Mic/XLR


Inst./jack

When an instrument jack is plugged you must press Inst/Pad to activate the input. This is also indicated on the setup page:

Ch3/Ch4
Connections for line channels 3/4 are located on the rear panel.

All Channels

4 Input Meters
These meters indicate the level of the signal present on the input channels. Best signal to noise ratio is achieved when the input signal only occasionally peaks at "0". Adjust the level on the sending device.

5 Clip LED (RED)
When the Clip LED is lit the signal is too hot. Reduce the level on the sending device to compensate.

6 Fabrik C Live and RIAA symbols
Fabric C Live and RIAA filters can be selected via the drop-down menu.

7 Send
Use the SEND knobs to send signal from each channel to the Fabrik R Live (reverb).
To actually hear the reverb make sure that Fabrik R Live is active.

8 Pan

Pan left/right using the left mouse button.
Press Ctrl+Shift and left mouse button to center.

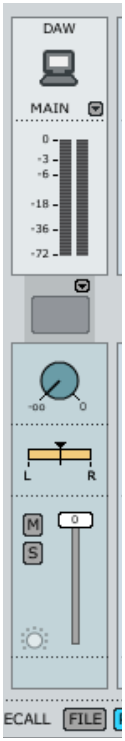
9 Out Level
Master out level.

10 lightring Assignment
All faders with the "lightring" indication can be assigned to the "source" controller on the front panel. When assigned, the lightring on the front panel displays the fader position.

THE CONTROL PANEL - MIXER PAGE

11 Digital Channels
The configuration of the digital channels is set via the Setup page. Please refer to the description on the following pages.

12 DAW Main - meters and fader



This section of the mixer handles the monitoring of the main outputs from your DAW. Having the controls at this place allows you to mix the channels with the DAW signal, right here on the Mixer page instead of having to switch between the programs.

TIP You can instantly mute a channel by holding ctrl+shift and click on the fader handle.

13 Effect Return level - Fabrik R Live
The reverb plug-in Fabrik R Live is set up on a bus that you can send to from each channel. The return level of this bus is set using this Effect Return level controller.

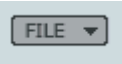
14 Monitor Mixer - Main Out level
This is where you set the output level for the monitor mixer. The output from the mixer can be sent to any of the physical outputs (Line 1+2, 3+4, S/PDIF or ADAT).

PRESET MANAGEMENT

The comprehensive file-based preset architecture makes storing presets a simple process. Presets are saved as discrete files on your hard drive. Once a preset is saved into the default location, it automatically appears in the "File" menu.

15 Preset File Menu

Pressing the File button will open the File menu. The File menu allows you to load or save into the currently selected program. P1, P2 or P3.
The following options are available from the File menu.



LOAD

By selecting Load, you can navigate to any folder in the system, including shared folders. By default you will be directed to the default location for Konnekt presets. Only presets located in the default file locations for TC Near control panel will be visible in the drop down menu.

SAVE

By selecting "Save", you can save your preset to any folder in the system that you have write access to, including any shared folder. By default, presets are saved to the default location of the TC Near control panel presets.

16 P1, P2 & P3

The TC Near control panel has 3 preset locations you can load and save presets from and to. These presets are "total recall" and holds all settings on all pages except for the Fabrik plug-ins.
These presets can also be selected using the DSP button on the front panel.

A/B

The A/B function allows you to set up two different parameter settings and A/B test between them.
Example:

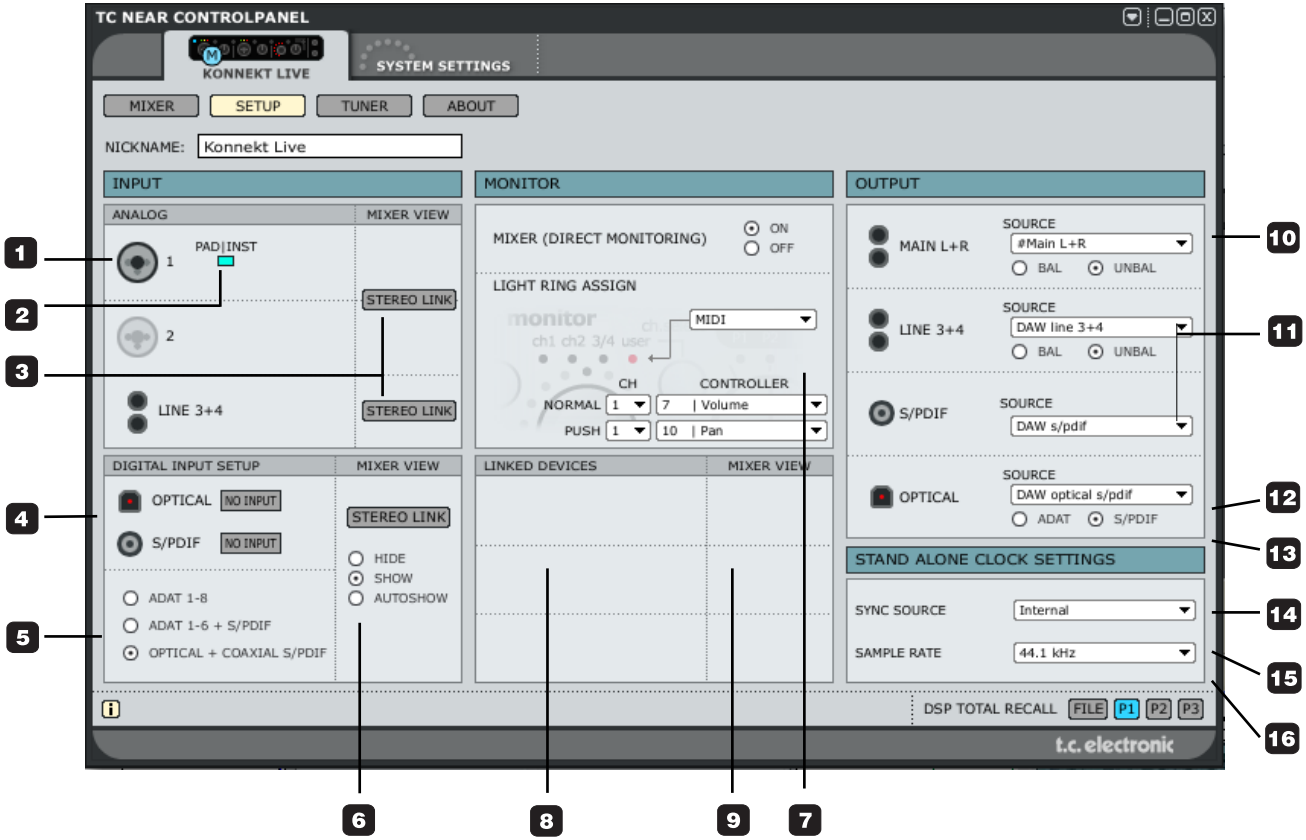
- *Press RESET - now neither presets A or B is selected.*
- *Change a parameter and "A" is automatically invoked and high-lighted.*
- *Press "B" and you are now on preset "B". Apply changes if you like.*

You can now alternate between A and B settings.

Reset

Press the Reset button reset the settings saved under A and B.

SETUP PAGE


TC NEAR CONTROLPANEL
KONNEKT LIVE
SYSTEM SETTINGS
MIXER
SETUP
TUNER
ABOUT
NICKNAME:
Konnekt Live
INPUT
ANALOG
MIXER VIEW
PAD|INST
1
2
LINE 3+4
STEREO LINK
STEREO LINK
DIGITAL INPUT SETUP
MIXER VIEW
OPTICAL
NO INPUT
S/PDIF
NO INPUT
ADAT 1-8
ADAT 1-6 + S/PDIF
OPTICAL + COAXIAL S/PDIF
STEREO LINK
HIDE
SHOW
AUTOSHOW
MONITOR
MIXER (DIRECT MONITORING)
ON
OFF
LIGHT RING ASSIGN
MIDI
CH
CONTROLLER
NORMAL
1
7 | Volume
PUSH
1
10 | Pan
LINKED DEVICES
MIXER VIEW
OUTPUT
MAIN L+R
SOURCE
#Main L+R
BAL
UNBAL
LINE 3+4
SOURCE
DAW line 3+4
BAL
UNBAL
S/PDIF
SOURCE
DAW s/pdif
OPTICAL
SOURCE
DAW optical s/pdif
ADAT
S/PDIF
STAND ALONE CLOCK SETTINGS
SYNC SOURCE
Internal
SAMPLE RATE
44.1 kHz
DSP TOTAL RECALL
FILE
P1
P2
P3
t.c. electronic
1
2
3
4
5
6
8
9
7
10
11
12
13
14
15
16

Input Section - Analog

1 Ch1/Ch2 auto-sensing input

Channel 1/2 connections on the front panel are auto-sensing. They automatically detect whether you have connected an XLR-plug (microphone) or a 1/4" jack (instrument), and indicate this graphically.

These are the options

Nothing connected

XLR

Inst/Jack

2 PAD/INST

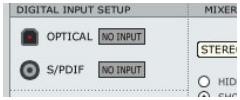
On the Konnekt front panel you can set Input sensitivity using the PAD/INST selector. When the PAD icon is lit PAD (line level) sensitivity is selected. This is the correct choice if you connect keyboards or guitar pre-amps/pedals or similar.

3 Stereo Link (Mixer view)

Press Stereo Link to link channels 1 and 2 and/or 3 and 4 into pair of stereo channels. This is an obvious choice when monitoring a stereo source.

Input Section - Digital

To process an external digital signal it is imperative that Konnekt is able to lock to this signal. The lock status is indicated in this section:



4 One of the below indications will appear:

Lock
Konnekt is locked correctly to an external source.

No Ref
Konnekt cannot lock to an external digital signal. Konnekt automatically switches to the internal clock.

5 Digital Input options

ADAT 1-8
All digital channels are reserved for ADAT channels 1-8.

ADAT 1-6 + S/PDIF 7-8
ADAT channels 1-6 is combined with the two digital channels available on coaxial S/PDIF.

TOS 1-2 + S/PDIF 7-8
This setting allows for 2 channels of optical S/PDIF (TOS) along side 2 channels of coaxial S/PDIF on the coax (phono) connections.

SETUP PAGE

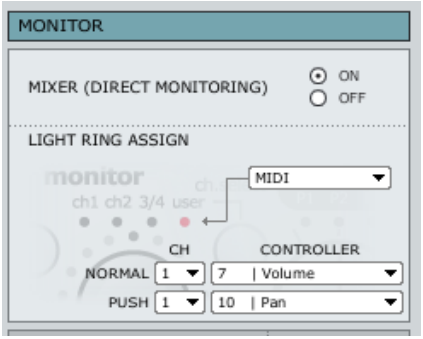
6 Mixer View - (digital)
The Mixer View function gives you a few options regarding the appearance of the digital channels on the Mixer page.

Stereo Link: Press Stereo Link

Hide: Digital channels are not shown on the mixer page.

Show: Digital channels are always shown on the mixer page.

Autoshow
Digital channels are only shown on the mixer page if a valid digital signal is present on at least one of the digital inputs.



Monitor

Mixer (Direct monitoring)
Konnekt offers a direct monitoring feature that allows monitoring of the input signal on the outputs with no latency.

7 Light Ring Assign(ment)
The LED lightring around the SOURCE level knob indicates the source level of the channel you have selected. Using the Ch Select button on the front panel you can select between:

Adat 1+2 / optical s/pdif
Adat 3+4
Adat 5+6
Adat 7+8 / coaxial s/pdif
DAW main
Fabrik R Live Level / Decay
Mixer level / dim level
Tuner Pitch / Tone
MIDI

MIDI mode - When MIDI mode is selected the "Source Level" encoder on the front panel can be used to send MIDI CC values on MIDI out.

- Select which MIDI channel to send MIDI CCs on.
- Select which MIDI CC to send.

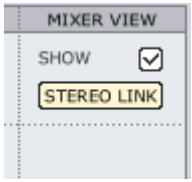
Normal mode - is when you simply turn the "Source level" encoder, - clockwise or counter-clockwise.

Push mode - is when you press in the encoder and turn at the same time.

8 Linked Devices
Up to four Konnekt units can be connected. You will most likely only monitor the physical outputs of one of the units. E.g., - you have only connected the outputs of one of your Konnekts to your active speakers, right? However, with the Linked Devices option you can monitor any input of any Konnekt unit in the system thru the same outputs.

Example:
We have 2 units in the system. The linked device will appear under "Linked devices" as illustrated below. If a third or fourth Konnekt was in the system - these would appear below also.

9 Mixer View

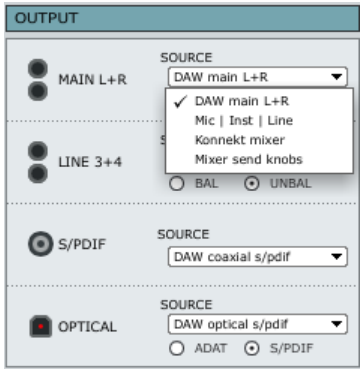


Show
Determines whether the link channels should appear on the mixer page.

Stereo Link
Press to stereo-link the link channels on the mixer page.

Output

In this section of the Setup page you set up signal routing to the Konnekt outputs.



10 Source select for various outputs

DAW - Main
When “DAW main L+R” is selected, the signal from your HD recording application (e.g. Ableton Live) is routed to the outputs.

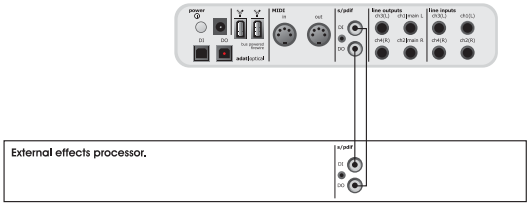
SETUP PAGE

Mic/Inst/Line
This is the option to use if you want to route the signal present on the Mic/Inst/Line connections on the Konnekt front panel to the outputs.

Konnekt Mixer
When Konnekt mixer is selected the main out signal from the Konnekt mixer page is routed to the outputs.

Mixer Send Knobs
On the Konnekt mixer you have the option to send a signal to the Fabrik R Live Reverb, using the channel send knobs.
However, you may choose to route the send to any of the routable outputs. This is great if you want to use an external effect with your monitor mix.

Example: External effect using S/PDIF



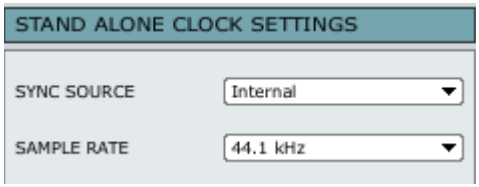
11 OPTICAL outputs

ADAT
Select ADAT to send up to 8 ADAT channels on the lightpipe out connection.

OPTICAL S/PDIF (TOS link)
Select OPTICAL S/PDIF to send 2 channels of optical S/PDIF to the lightpipe out connection (TOS link).

SOURCE
Same options as with the Line3+4 and S/PDIF output sources.

Stand Alone Clock Settings



These settings handle the clock settings when Konnekt operates as a stand-alone unit. For changed settings to take effect: power off - power on.

12 Sync Source options

Internal:
Konnekt will sync to its internal clock and disregard the clock present on the digital inputs.

S/PDIF:
Konnekt will attempt to lock to the digital signal present in the S/PDIF DI connection.

Optical:
Konnekt will attempt to lock to the digital signal present in the ADAT/optical input connection.

13 Sample Rate

Options are:

44.1 kHz	Both Fabrik R Live and Fabrik C Live available*
48 kHz	Both Fabrik R Live and Fabrik C Live available*
88.2 kHz	Fabrik R Live or Fabrik C Live available*
96 kHz	Fabrik R Live or Fabrik C Live available*
176.4 kHz	Fabrik R Live and Fabrik C Live not available.
192 kHz	Fabrik R Live and Fabrik C Live not available. RIAA filters are not available.

ROUTING MODES

Which routing modes should I choose?

The Fabrik plug-ins can be set to run in either internal or plug-in mode. Recording and mixing scenarios call for considerations regarding which routings to use.

Recording

In the typical recording situation you wish to:

- Monitor the source with no latency.
- Record the source signal. Either dry or processed via the Fabrik C Live channel strip. Often when working with a microphone and a pre-amp/channel strip you will add slight compression and EQ from the pre-amp and record this signal only. The Konnekt IMPACT™ preamps and Fabric C are excellent tools.
- Listen to the Fabrik R Live reverb on the source signal as “cue reverb” without recording the reverb.

Processing latency considerations.

The processing latency through the Fabrik Reverb and the Fabrik Channel Strip will depend on the Buffer Size setting set on the System Settings page. When monitoring while recording you can typically accept a short delay on the Fabrik Reverb but NOT on your Fabrik Channel strip.

Therefore we recommend:

- Running Fabrik R in Plug-in mode both when recording and mixing.
- Running Fabrik C in Internal mode when recording and in Plug-in mode when mixing.

WDM handling (Windows only)

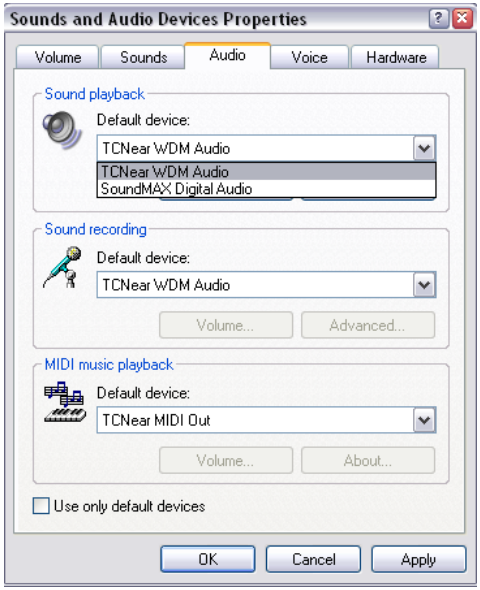
WDM is Windows' audio driver system, and is used for Windows sounds, media player and other applications that don't support ASIO. Also applications such as PowerDVD uses WDM as audio driver system.

With the current version of the Konnekt software, you can use two WDM input channels - and two WDM output channels. The input channels are fixed to “mic/inst/line in 1 and 2” - and the output channels are fixed to Main Outs L and R.

Setting up

To use Konnekt with WDM, you need to tell Windows that this is your intension.

Go to:
Control Panel/Sounds and Audio Devices Properties/Audio

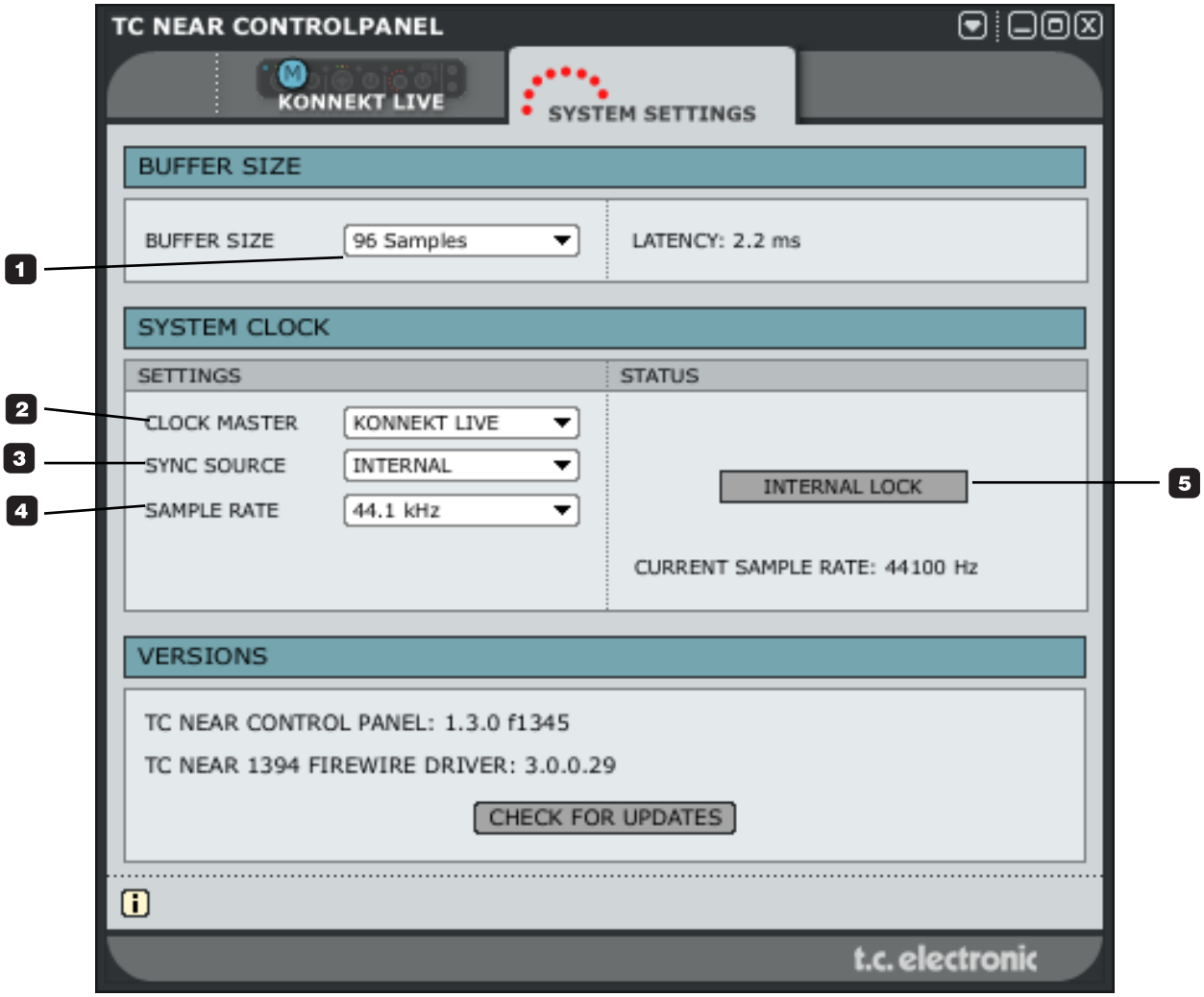


Select "TCNear WDM Audio" for both Sound playback and Sound recording.

Konnekt is able to handle both WDM and ASIO at the same time. If you wish, you can listen to background music from your media player or watch a DVD movie while working with your audio application at the same time.

SYSTEM SETTINGS

Access the System Settings page by pressing:



Buffer Size*

1 The buffer size can be set from 64 to 8192 samples. The higher buffer setting, the longer latency through Konnekt. The default buffer size is set to 256 samples.
You should only increase the buffer size if you experience problems such a clicks and pops in the sound.*

* Relevant for PC version only. On Mac computers buffer size is set in audio application. For instance in Logic Pro go to: Audio/Hardware drivers to set the buffer size.
Note - clicks and pops in the sound may also derive from clock problems. These should be resolved first.

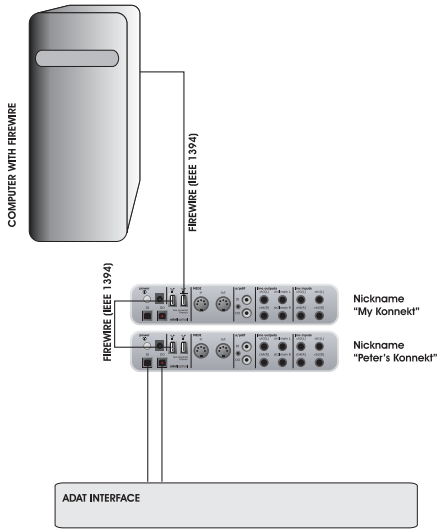
Clock

2 Clock Master
With the Clock Master parameter you select which of the Konnekt units in your setup that will act as System Clock Master.

In a digital setup, it is important that all connected devices run at the same sample rate. The Clock Master device defines this sample rate, and distributes a digital clock based on this sample rate to all devices in the setup. There can be one, and only one clock master in a digital setup, and you cannot select your computer here; the clock master device is always your audio interface. However, the Clock Master device may sync to an external device. See "Sync Source" below.

3 Sync Source
The Sync Source parameter determines to which device the Clock Master should sync. The DICE II FireWire chip provides excellent clock and in many setups the "internal" option is the best choice. However, you may sync to any digital device attached to the Konnekt digital inputs and enjoy the outstanding JetPLL jitter rejection technology also provided by the DICE II.

Example 1 - Konnekt as Clock Master: Setting Clock Master and Sync Source.



- The setup consists of 2 Konnekt units connected via FireWire, a computer and an ADAT interface.
- We assigned the nick-names "My Konnekt" and Peter's Konnekt" to the two Konnekt units. (nick-names are set on the Setup page).

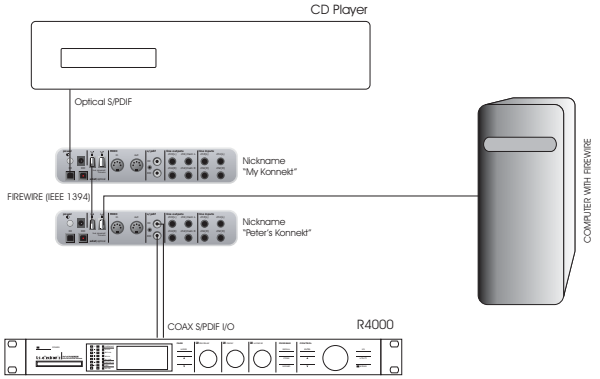
The intention is to sync the entire setup to the ADAT interface.

- Set **Clock Master** on the System Settings page to "Peter's Konnekt" as this is is the physical Konnekt unit that will determine the clock master.
- Set **Sync Source** to ADAT as this is the connection on the Clock Master unit that you would like to sync to.

That is basically it. The **Sample Rate** should only be set if Internal Clock source is selected.

SYSTEM SETTINGS

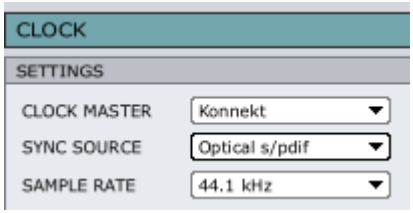
Example 2: Konnekt Jitter Rejection



In this setup we have a CD player in the system. In therms of digital clicking a CD player is uncontrollable and can thus only act as master.

Thanks to the DICE II FireWire chip with integrated JetPLL jitter rejection technology, Konnekt Live provides a very high clock quality. Not only does Konnekt provide a high quality clock but the excellent jitter-rejection facilities will clean up a digital signal from an external source.

- The CD player is connected to “My Konnekt” via optical S/PDIF.
- “My Konnekt” is selected as Clock Master on the System Settings page and Sync Source is set to Optical S/PDIF.



- The R4000 is connected to the other Konnekt in the setup (Peter’s Konnekt) and it is set to slave to “external”.

4 Sample Rate

If Sync Source is set to “Internal”, the sample rate must be set. The options are:

44.1 kHz
48 kHz
88.2 kHz
96 kHz
176.4 kHz
192 kHz

The sample rate is typically set by your host application (e.g. Cubase LE). If you e.g. play a 44.1 kHz project the sample rate automatically shifts to 44.1 kHz. If you later load and play a 48kHz song, the sample rate shifts to 48 kHz.
Though Konnekt receives information about the sample rate it still provides the actual digital clock.

5 Lock Status

Various lock status indications can be given:

Internal Lock
Indicates that the system is locked to the Konnekt unit set as clock master.

External Lock
Indicates that the system is locked to an external digital device connected to the Konnekt set as clock master.

SYSTEM SETTINGS & FIRMWARE UPDATE & RESET TO DEFAULT

Versions

This section gives information on Control panel versions and FireWire driver.

Check for updates

- If the computer is connected to the Internet you may check for updates by pressing “CHECK FOR UPDATES”. You will be directed to the Konnekt product page at www.tcelectronic.com
- Press “Click here to download the latest version” and download the full installer.
- Run the installer.

Updating firmware

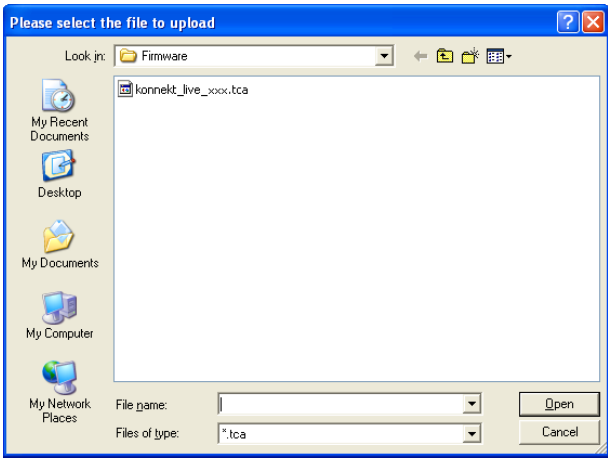
- Once the installer is run (see above), the latest version of firmware is placed in the TC Near folder on your hard disk.
- You will now need to update the firmware for each konnekt unit in the setup.

- Go to the “About page” for the unit you wish to update.

Example

- Press UPDATE FIRMWARE and you will be directed to the folder where the firmware is located.

Example



- Select the “xxx.bin” file with the highest number. This is the latest released firmware.
- Now press “Open” and wait while the firmware is being updated.

Reset to Default

The Reset to Default function will reset the selected Konnekt unit to factory default settings for the currently loaded software.

NOTE The software will not be degraded to previous software versions and no presets are affected.

FABRIK C LIVE

Introduction

Fabrik C Live is based on the innovative Meta Intuitive Navigation Technology (MINT™) that redefines the way you use professional audio plug-ins for professional results. We have integrated a simple yet highly effective and intuitive approach to working with audio, and the result is a user-interface with few handles that are effective but simple to use. Often people think that if you want to create professional results the process has to be tedious and complex – we don't agree. The Fabrik plug-ins introduce a new way of working with audio, and they build on proven and award-winning TC technology, ensuring the highest level of audio quality.

Fabrik C Live is a full-blown channel strip plug-in with EQ, De-Esser, 3-band Compressor and Limiter in one single plug-in. With MINT™ you have total control of all parameters, using only a few dedicated knobs. The EQ section is a 4-band parametric EQ with high/low-pass filters – choose between 4 different filter types. Based on no-nonsense design, the De-Esser is controlled using a single fader.
With a built-in 3-band intelligent compression technique the Compressor is not only one of the best compressors available, - it also gives you the means to avoid bad side effects compared to traditional compression. Combined with the Limiter the compression section can be used in a musical way without worrying about overshoots.

Main features

- Built-in MINT™ (Meta Intuitive Navigation Technology)
- Three main sections with TC technology: EQ, de-esser and compressor
- Predefined presets based on source selection
- Intuitive and easy control of dedicated parameters – Instant gratification
- 4-band parametric EQ
- Scalable de-esser
- 3-band/full band compressor
- Limiter
- Control multiple parameters with few knobs
- 48 bit double precision

- **Access the Fabrik C Live channel strip by pressing the Fabrik C Live tab.**

Overview

Full-band or 3-band compression?

Fabrik C Live includes both a 3-band and a Full-band compression mode. As Fabrik C Live is a plug-in that is designed to be used on single sources and not as a dedicated mastering tool you might wonder how the 3-band mode applies.
An overall “rule of thumb” is that if you are working with a source that has a wide frequency range with large peaks in specific frequency areas, you are most likely best off using the 3-band mode. If, on the other hand you’re working with audio that is within a small frequency area, such as e.g. a trumpet section or background vocals, you’ll obtain a great advantage using the Full-band mode.
Let us look at a few specific application scenarios to give you an idea of what can be achieved with the different compression styles.

3-band compression on Bass

If you are to do a 3-band compression on a bass, this will allow the higher frequencies to pass through, while adding compression to lower frequencies. What this gives you is better control and longer sustain, and a more punchy bass with all the overtones intact.

FABRIK C LIVE

3-band compression on grouped sources
If you have grouped several sources and want to do a "global" compression on this section, the 3-band mode can be very effective. It will give you more transparency in your overall mix as you can apply independent compression to each of the three frequency bands.

Full-band compression on vocals
You probably know that "in-your-face" airy kind of vocal that you hear on some tracks? The way to get that effect is by using a full-band compressor on your vocal track, slowing the attack time, and speeding up the release time. It's pretty simple when you know how to do it.

Full-band compression on Guitar
It's amazing how some tonal instruments can get a very percussive quality to them when the right type of effect is applied. Using a full-band compressor on a rhythm guitar will give you a sound that is sharp, sweaty, funky and really emphasizes the rhythmic and percussive qualities of your track.

Limiter

The Limiter is used to prevent overloads occurring at extreme and occasional peaks in the source material, - peaks that may not be caught and attenuated sufficiently in the Compressor. As the Limiter can be used to limit the extreme, the Compressor can be used to apply a much more "musical" and gentle compression.

EQ Section

The Fabrik C Live EQ section is a 4-band parametric EQ that gives you full control of high- and low-pass filters. Four filter types are available offering Notch, Parametric, Shelving and Cut. If you are looking for a razor sharp filter, use the Notch filter which has a range as low as 0.01 of an octave. For a more gentle approach go for the shelving filter that sports a variable slope with a range from 3 dB/oct over 6 and 9 to 12 dB/oct. The Cut filter can be switched between a flat amplitude maximum of 12 dB to an octave, and a flat group delay type. For a natural and "well behaved" bandwidth, apply the parametric EQ.

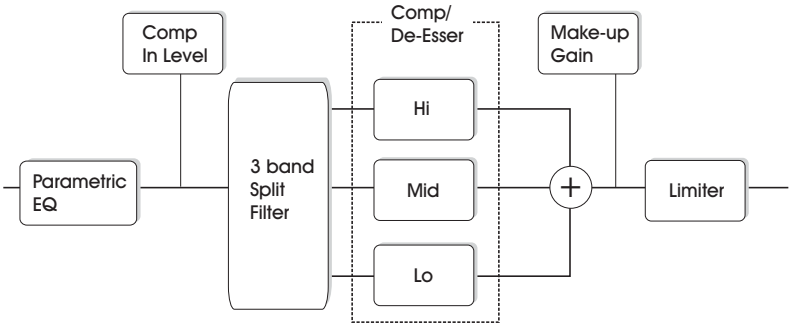
De-Esser

A De-Esser is a compressor type used to reduce only specific sibilant frequencies. Typically the "s" sounds can be far too dominant on a vocal track and the track would therefore often benefit from being processed by a De-Esser.

Headroom

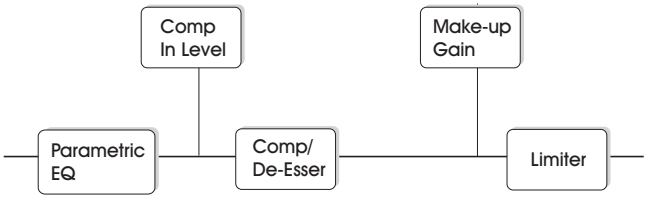
To avoid internal clipping and to secure ease of use, all processing is done in the 48 bit domain, and is not truncated to 24 bit before the output of the Limiter.

Signal Flow - 3-band mode



This is a schematic overview of the signals flow through the algorithm in 3-band mode. As illustrated - the signal first passes the 4-band parametric EQ. The signal is then split into lo-, mid- and hi-bands for individual compression. Cross-over frequencies between the bands are set by the selected Source type.
After the Make-up Gain section, the signal passes the Limiter.

Signal Flow - Full-band mode

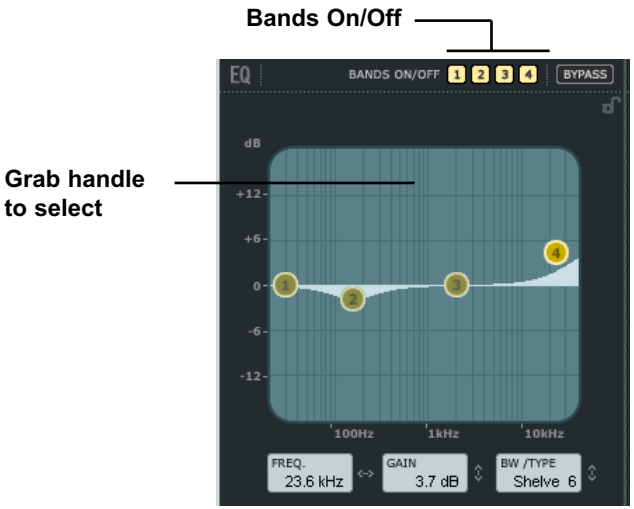


The signal flow in Full-band mode is similar to 3-band mode. The difference lies solely in the Full-band compression as opposed to the split-filter and 3 compression bands found in 3-band mode.

FABRIK C LIVE

EQ section

The Fabrik C Live EQ section is a 4-band parametric EQ with four selectable filter types: Notch, Parametric, Shelving and Cut. If you're looking for a razor sharp filter, use the Notch filter that has a lower limit as low as 0.01 octaves. For a more gentle approach the shelving filter with a variable slope is a better choice. Cut filters can be switched between a 12dB/oct maximum flat amplitude (Butterworth) and a flat group delay type (Bessel). Mark the handle (1, 2, 3 or 4) for the band to adjust. Set the BW/Type, then grab the handle again and move for frequency/gain adjustments.



Bands On/Off
Click to activate/deactivate the four individual bands.

Adjusting Frequency and gain
Simply grab the symbol for one of the active bands (1, 2, 3 or 4) using the left mouse button and move until desired settings are achieved.

Adjusting BW/TYPE
First select a band. Then place the cursor within the BW/Type field, press left mouse button and move mouse up/down to change type and bandwidth. Different filter types are available for the Low, Mid and High filters. Please refer to the following pages for overview of the EQ types.

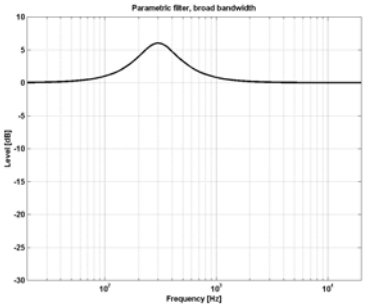
Bypass
Press to bypass the EQ section.

Filter types

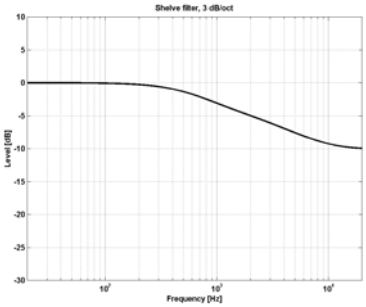
For Lo and Hi filters select between filter types: Parametric, Notch, Shelve and Cut.

For Mid 1 and Mid 2, select between filter types: Parametric and Notch.

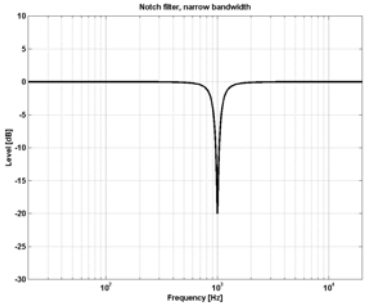
Parametric Filter - Broad type



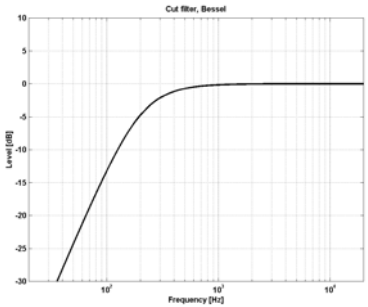
Shelving Filter



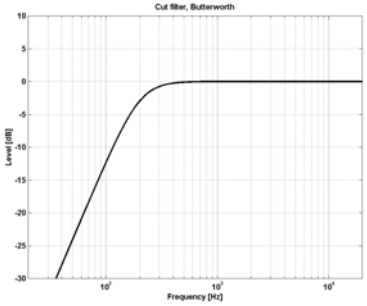
Notch Filter - Narrow type



Cut Filter - Bessel type



Cut Filter - Butterworth type



FABRIK C LIVE

Type

Range for the Notch filter:

Lo Gain	: -inf; -97 dB to 0 dB
Mid1 Gain	: -inf; -97 dB to 0 dB
Mid2 Gain	: -inf; -97 dB to 0 dB
Hi Gain	: -inf; -97 dB to 0 dB

Range for the Notch filter:

Lo BW	: 0.01 oct to 1oct
Mid1 BW	: 0.01 oct to 1oct
Mid2 BW	: 0.01 oct to 1oct
Hi BW	: 0.01 oct to 1oct

Range for the Parametric filter:

Lo BW	: 0.1 oct to 4 oct
Mid1 BW	: 0.1 oct to 4 oct
Mid2 BW	: 0.1 oct to 4 oct
Hi BW	: 0.1 oct to 4 oct

Range for the Shelve filter:

Lo BW	: 3dB/oct to 12dB/oct
Hi BW	: 3dB/oct to 12dB/oct

Range for the Cut filter:

Lo BW	: Bessel or Butterworth
Hi BW	: Bessel or Butterworth

Bandwidth/Q - Key-Values:

BW		Q
0.5	-	2.87
0.7	-	2.04
1.0	-	1.41

Freq

Range - Lo band	: 20 Hz to 20 kHz
Range - Mid1 band	: 20 Hz to 20 kHz
Range - Mid2 band	: 20 Hz to 20 kHz
Range - Hi band	: 20 Hz to 40 kHz

Gain

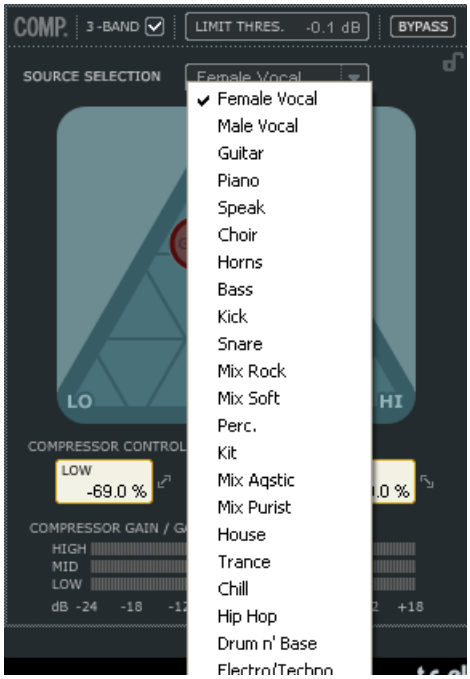
Select the band, click on the Gain field then drag the mouse vertically to change the value.

Range for the Parametric and Shelve types:

Lo Gain	: -12 dB to +12 dB
Mid1 Gain	: -12 dB to +12 dB
Mid2 Gain	: -12 dB to +12 dB
Hi Gain	: -12 dB to +12 dB

Source selection

- via the drop down menu

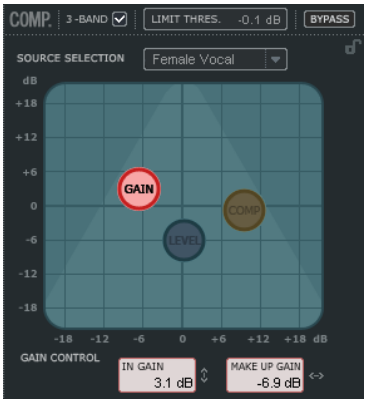


Source Selection
Use the drop-down menu to select which type of material you are processing.

Each type selects a carefully tuned combination of the essential compression parameters: Attack, Release, Threshold and Ratio.

Compression

3-band and Full-band modes
Gain page



Gain Control
The Gain settings are very important.
The higher set In Gain the harder the signal meets the Compressor Threshold.

- Grab the “G” and move the symbol in vertical and horizontal directions to set both In Gain and Make-up gain with just one handle.

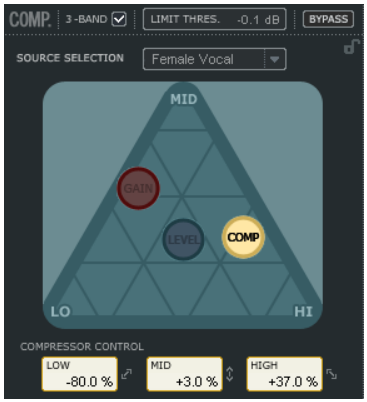
The Threshold is automatically set when the Source type is selected, however, the Gain parameters determine how hard the signal meets the Threshold.

Depending on how the Compressor parameters are set, the level will change. The Make-up Gain parameter is used to compensate for this level change.

In Gain Range: -18 to +18 dB
Make-up Gain: -18 to +18 dB

Compression

3-band mode only
Compressor Control page



Compressor control
The Low, Mid and High parameters indicate the set compression amount for the three bands.

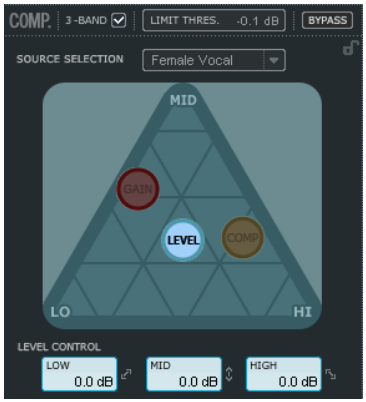
- Grab the “C” and position this icon freely within the triangle to distribute the amount of compression on the three bands.

If the compression should primarily be on the low end frequencies move “C” in that direction. Likewise with the Mid and High areas.

Where the Gain parameter is used to gain the input of the Compressor and also set the Make-up gain on the output, the Compression Control adjusts the individual compression amount on the three bands.

Compression

3-band mode only
Level page



Level Control
Depending on the amount of applied compression you may need to level compensate the three individual bands.

- Grab the “L” and position this handle freely within the entire triangle.

Whereas the Make-up Gain function on the Gain page is used as a general level compensation on the entire signal, the Level control can be used to set the level of the three bands individually.

Compression

- Full-band mode

The Compressor is in Full-band mode when “3-band” is not marked.

In 3-band mode the Compression Control “C” and the Level Control “L” handle the distribution of compression and level between the 3 bands. In Full-band mode these controls are redundant and not available.
In Full-band mode only Source select “S” and Gain “G” apply.

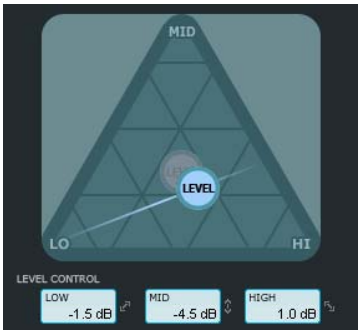
See pages 31-32 for application examples of the Full-band mode.

Adjusting Parameters - Compressor section

As described in the previous section the parameters on the 4 Compression pages are adjusted simply by grabbing and moving the “S”, “G”, “C” and “L” handles - however, a few extra cool features are available.

Grid

On the Source pages the “S” handle moves in vertical and horizontal directions only, but on the Compression Control, Level and Gain pages the “C”, “L” and “G” handles move freely in all directions. You may, however, see the advantage of moving the handle in one direction only. Therefore it is possible to lock a direction in a “grid”.



- Grab the “C”, “L” or “G” handle using the left mouse button.
- Press and hold the Alt key (Mac: Command key), while moving the mouse in a circle. The “compass” function is now active and you can select one of 2 to 6 directions.
- Release the Alt key (Mac: Command key)and move the mouse still holding the left mouse button pressed to select desired values.
- Release mouse button to release the grid.

FABRIK C LIVE

The Limiter

Fabrik C Live also holds a Limiter. The Limiter is used to prevent overloads occurring at extreme and occasional peaks in the source material - peaks that may not be caught and attenuated sufficiently by the Compressor. With the Limiter can be used to limit the extremes, the Compressor can be used to apply a much more “musical” and gentle compression.

Threshold
Range: -12dB to 0dB
The Threshold sets the max amount allowed to pass through the Limiter.
We recommend a setting of -0.1dB as maximum.

De-Esser

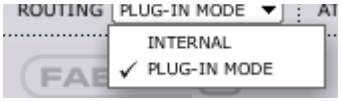
A De-Esser is a compressor type used to reduce only specific sibilant frequencies. Typically the “ss” sounds can be too dominant on a vocal track and the track would therefore often benefit from being processed by a De-Esser.
The De-Esser also comes in handy when working with background vocal tracks with many voices dubbing the “s”-sounds from the lead track.
The De-Esser works in both 3-band and Full-band modes.

Bypass
Use Bypass to activate or deactivate the De-Esser.

Amount
Range: 0 to 100%
While listening, move the slider from left to right set appropriate amount of de-essing. A De-Esser reduces certain high-end frequencies and you should not set the Amount parameter higher than necessary.

Routing modes

Two routing modes can be selected via the Routing mode drop-down menu.



Plug-In mode - must be selected when Fabrik C is used as VST plug-in.

Internal mode - Use internal mode when Fabrik C is used without a host program with VST facilities and when monitoring a source signal with no latency.

Example:
Typically you would record thru the Fabrik C channel strip adding limited compression and EQ. In this case Internal mode should be selected.
When mixing you would probably use the Fabrik C as a good channel strip inserted as VST on a channel. In that scenario “Plug-In mode” would be the correct choice.

FABRIK R LIVE

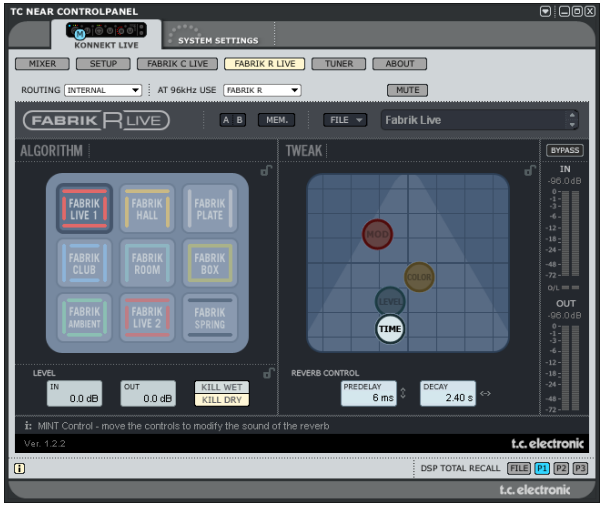
Introduction

Fabrik R Live is based on the innovative Meta Intuitive Navigation Technology (MINT™) that redefines the way you use professional audio plug-ins for professional results.
Fabrik R Live combines nine TC Reverb algorithms in one single plug-in. Thanks to MINT™, it is a breeze to find the sound you are looking for. If you want to apply a “live” vibe to your vocals or instruments, use the Live Reverb. For vocals that need a “larger” quality, choose the Hall Reverb. For that sound of the past and for drums and percussion, apply the Plate Reverb. If you’re working with guitars try the Club Reverb, which also works great with vocals. Within each reverb you’ll find it very easy to adjust any setting to your own liking. You won’t waste time with nitty-gritty preset adjustments - all you really have to worry about is using your ears.

Main features

- Built-in MINT™ (Meta Intuitive Navigation Technology)
- Four new TC reverbs: Fabrik Live, Fabrik Hall, Fabrik Plate, Fabrik Club
- Intuitive and easy control of dedicated parameters – Instant gratification
- Exceptionally good for vocals, drums & percussion, and instruments
- Perfectly emulates that illustrious “live” ambience
- Control multiple parameters with few knobs
- 48 bit double precision

Overview



Reverb Types

• Select one of the 9 Reverb types using the left mouse button.

Fabrik Live
Live recorded audio sources sometimes have a lot of background noise. A very smooth discrete reverb on such a source will often be almost in-audible. What you need is a brighter and grainier reverb for that type of audio material, and the Live reverb is perfect for that job. Try medium to long decay times and have a listen. The Live reverb type also does wonders for vocals or instruments that need a clear and to the point reverb. Try it on different material and you'll be surprised with the results. Two Konnekt Live comes with two variations of this algorithm. Experiment and listen to the differences.

Fabrik Hall
Often you're concerned about preserving the natural characteristics of your source material, and reluctant to apply "large" reverbs. Don't worry, the Hall reverb will preserve your audio and add a large hall effect giving you lots of natural sounding "space". For most vocal material this reverb is superior to many other reverbs and will be an excellent choice for various studio applications.

Fabrik Plate
Welcome back in time! In the old days reverberating springs or large metallic plates were used to create a reverb effect. The Plate reverb emulates this characteristic type of reverb. If you're working with a recording of percussive instruments, it will often call for a diffuse, bright and light reverb, and the Plate is just perfect for that job.

Fabrik Club
This reverb could be exactly what the doctor ordered if you want to put extra focus on the guitar or the vocals. It emulates a medium-sized club, adding a broad yet intimate feel to your audio material. If you've got a recorded guitar that cries out for reverb, but you don't want the "stadium rock" sound, the Club reverb will do the trick, well, that goes for vocals and horns too.

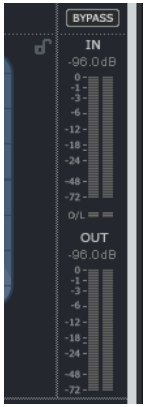
Fabrik Room
The Fabrik Room algorithm simulates a relatively small, well furnished room. In such a room, many reflections are absorbed by soft materials, and the sound is reflected and sustained only by the walls (covered with wallpaper), windows and maybe some furniture.

Fabrik Box
The Fabrik Box algorithm defines and excel in reproducing the reflection patterns of a small box. If the "in your face"-feeling of a 100% dry recording is too much, try this eminent reverb to create just a bit of distance.

Fabrik Ambient
With focus on the Early Reflections that define the perception of a room size, the Ambience Reverb is typically used on dry recordings or dry drum samples to emulate a feeling of environment. "Ambience" and "Room definition" are keywords here.

Fabrik Spring
The Spring algorithm has been designed to reproduce the sound of the old spring reverbs, such as the ones used in vintage guitar amps.

FABRIK R LIVE



Tweak section

In this section, all parameter adjustments are made. Parameters are organized in 4 different layers/pages.

R - Reverb
C - Color
M - Modulation
T - Time

There are a couple of different ways of altering the parameter values:

- First, select parameter by placing the cursor on one of the above-mentioned icons (“R”, “C”, “M” or “D”) and click. Then - grab the icon and drag in any direction. This way of changing parameter values gives an excellent intuitive feeling.
- You can of course also change parameter values by grabbing the parameter value fields and drag the mouse up or down.
- Finally, values can be entered numerically by double-clicking on the parameters value fields and entering values using the keypad.

Meters

The list below shows the exact distribution of value readings on the meter segments on both IN and OUT meters. A precise reading close to 0dBFS and around key values such as -18, -20 and -24 dBFS is imperative and this distribution takes these key values into consideration.

O/L - Overload indication
Internal overload is indicated via the O/L indicators located between the In/Out meters. Internal overload may occur at certain extreme parameter settings even when the In Level meters show reasonable levels.
Use the In/Out parameters to compensate.

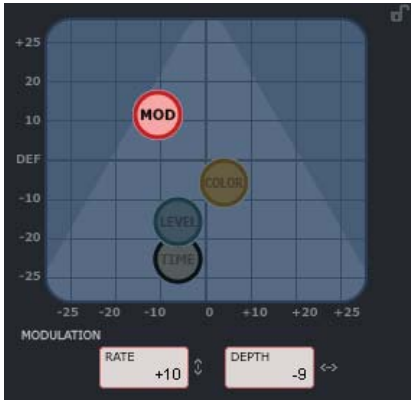
0 dBFS	-16
- 0.5	-18
-1	-20
-2	-22
-3	-24
-4	-30
-5	-36
-6	-42
-8	-48
-10	-56
-12	-64
-14	-72

Reverb page

Decay
Range: 10 ms to 20 sec
The Decay parameter determines the length of the Reverb Diffuse Field. The length is defined as the time it takes for the Diffuse Field to decay approximately 60dB.

PreDelay
Range: 0 to 100 ms
A short Delay placed between the direct signal and the Reverb processing. A Pre Delay is often used to keep the source material clear and undisturbed by the Reverb Diffuse Field.

Modulation page



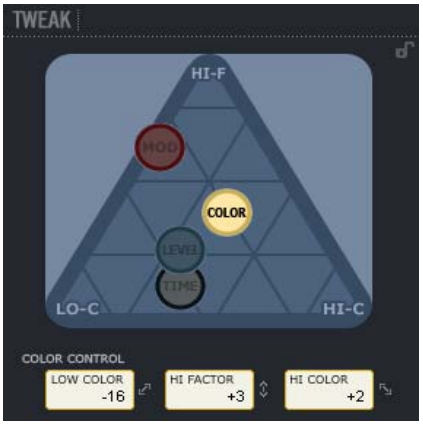
The algorithm designers have adjusted the diffuse field part of the reverb to be as smooth and natural sounding as possible. However, by modulating the diffuse field, the reverb will, in certain cases, integrate better with the entire signal. You may also find the modulation parameters useful simply to create new flavors of reverb.

Modulation Rate
Range: +/-25
Adjusts the Rate of modulation.

Modulation Depth
Range: 0 - 200%
Adjusts the Depth of modulation.

FABRIK R LIVE

Color page



The Color parameter controls are advanced controls handling the sonic spectrum of the Reverb diffuse field. Try adding a bit of HiColor if you feel the level of reverb is correct, but still doesn't stand out as intended.

LoColor
Low Color adjustment of the Decay.

HiFactor
The HiFactor parameter is used to enhance or attenuate the frequency area set by the HiColor parameter.

HiColor
HiColor adjustment of the Decay. This parameter selects frequency area in focus.

Level page

The relation between Dry, Early and Reverb levels defines the perceived distance of a source. The less dry the signal compared to Early and Reverb levels, the greater the perceived distance. Early and Reverb levels set the relation between the amount of room definition compared to the reverb diffuse field.
If the Kill Dry button is pushed, Dry Level is fixed at off. If the Kill Wet button is pushed, Early and Reverb Levels are fixed at off.

Dry
Range: Off, -24 dB to 0 dB
Sets the amount of dry level passing through the algorithm.

Early
Range: Off, -24 dB to 0 dB
The Early Reflections are the defining basis of the Reverb diffuse field. Adjust the amount to set the emphasis between the Early Reflections and the Reverb diffuse field.

Reverb
Range: Off, -24 dB to 0 dB
The Reverb parameter sets the amount of applied reflections from the Reverb diffuse field.

Additional parameters

Bypass
Bypass function for the entire plug-in.

In/Out
In level Range : -24 to 0 dB
Out level Range : -24 to +12 dB

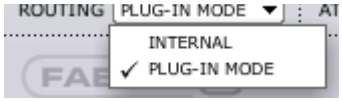
Sets the Input/Output levels for the algorithm. If the Internal overload indicators "O/L" are lit, you may need to readjust the In/Out levels.

Meters
In and output meters. For best performance the In meter should show as close to 0 dB as possible without clipping.

Kill Dry - Kill wet
A reverb can be used either as an insert effect or as a send effect.
Most often it is used as a send effect on a bus. The bus is fed from the channels you apply the effect to. When used as a send effect the Kill Dry should be set to "on" and this is also the default setting. When used as an insert channel, dry signal is necessary and Kill Dry should be set to "off".

Routing modes

Two routing modes can be selected via the Routing mode drop-down menu.



Plug-In mode - must be selected when Fabrik R Live is used as VST plug-in.

Internal mode - Use internal mode when Fabrik R is used without a host program with VST facilities.

Example:
Using Plug-In mode in a recording situation will add a slight delay on the reverb. The delay length is depending on the selected Buffer Size (set on the System Settings page). However, as the reverb is used as a send effect, unlike Fabrik C which processes the entire signal, you will most likely not notice that delay in a recording situation on the Reverb. Therefore we suggest using the Plug-In mode for Fabrik R in both recording and mixing.

RESONANCE FILTER

Konnekt Live comes with ResFilter, a plug-in that offers state-of-the-art filtering effects. Throw in resonance, 6, 12 and 24 dB slopes for even more stunning sounds. Its inter-communication-bus facilitates controlling and tweaking multiple plug-ins and parameters from one plug-in, cross-fading between two instances of the plug-ins etc.

Basic operation
The ResFilter integrates as a pure VST filter and does therefore NOT open from the TC Near control panel like the Fabrik plug-ins.

- First select the filter type (lo-pass or hi-pass) and the slope.
- Then adjust the resonance amount. the resonance will occur at the filter's cut-off frequency. Please note that a filter with a slope set to 6dB, does not have a resonance.
- The ResFilter is controlled by an envelope follower which has depth, attack and decay time controls. Attack and decay time define the enveloper follower's responsiveness. Depth defines the amount of modulation. Try the different presets to get and idea of their modulation capabilities.

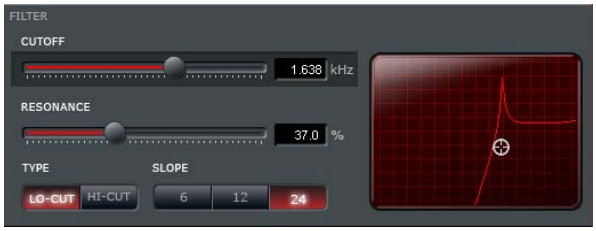
Instance name

As several instances of the ResFilter can be opened at the same time you may find it useful to name each instance. Place the cursor and type in your preferred name.

Filter

Cutoff
Sets the cutoff frequency for the selected filter type (Lo-Cut or Hi-Cut).

Resonance
A resonance filer boosts frequencies just prior to the selected Low or Hi-Cut filter. The higher the setting, the more pronounced the filter effect. The resonance is set in percent.



NOTE Beware that extreme settings at loud levels may damage your speakers.

Type & Slope
Select between Lo or Hi-Cut filter types. The steepness of the curve is set by the "Slope" parameter. Select between 6, 12 or 24 dB slope. The higher the dB the steeper the slope:


6 dB slope


24 dB Slope

Output

The SoftSat section provides more drive for the resonance filters output, allowing you to create a warm-sounding "analog" distortion.

Softsat on/off
On/off switch for the Softsat section.

Damp
On/off for the hi-frequency attenuation.

Mute
ResFilter mute. In mute mode the source signal is still passed to the output.

Drive
Range: -100 to 100
Sets the amount of drive for the soft-saturation.

Output
Range: -100 to 100
Sets the output level.

RESONANCE FILTER

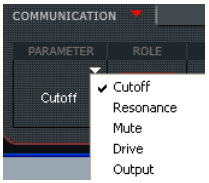
Communication

Using the communication section, it is possible to send and receive parameter movements between instances of the plug-in. In other words, a parameter on one instance of the plug-in can control an unlimited amount of parameters in other instances of the plug-in.

Communication is not limited to each of the parameter types, but works very fine across parameter types. For example, the Cutoff parameter of one instance can control the output level of another instance.

Let us take a look at the parameters in the communication section.

Parameter



Selects the parameter you would like to link to a parameter in another Res Filter instance. Meaning - this is the handle you will use to change parameters in other instances of the plug-in.

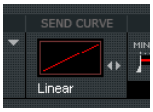
Role

Sets the role of the plug-in instance. If “Master “ is selected you can control other instances set to “Slave”.

Target Parameter

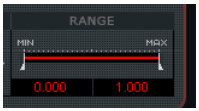
This is where you select the parameters to control in the other instances of the plug-in.

Send Curve



The send curve determines how the slave parameter should react to movement of the master parameter. E.g. you may prefer that the value of the slave parameter moves in the opposite direction of the controlling parameter.

Range



Using the range parameter you can limit the movement of the target parameter. Grab the two small handles to change values or place, hold and move left mouse key in the value fields below.

Here are a few examples of automation between more instances of the ResFilter.

Example: Cross fade between two tracks.

- Insert a ResFilter plug-in on each of two tracks A and B
- Send the Cutoff parameter from the instance on track A to the one on track B
- Select a cross fade filter curve
- Now, when you turn down the cutoff frequency on track A, the one on track B will go up

Example: Control the filter on multiple channels.

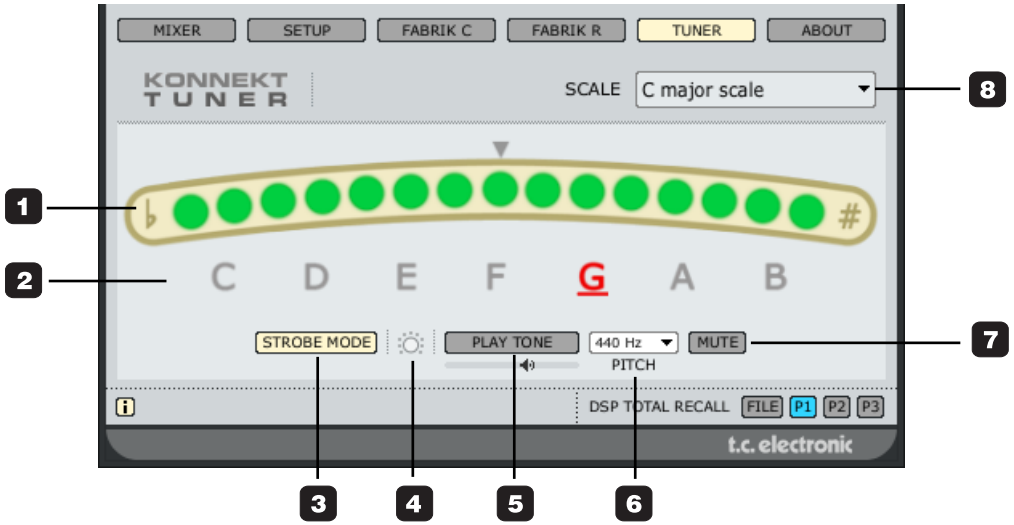
You have a mix with 32 tracks. You want to fade all tracks out, but instead of using track levels, you want to fade out using Cutoff.

- Place an instance of ResFilter on all tracks.
- Set the first one to send out the Cutoff frequency, the other ones to receive.
- Now, automating only the first instance will make all tracks fade out.

THE KONNEKT LIVE TUNER

Konnekt Live holds an excellent tuner with various modes for stringed instruments. The Tuner page holds all relevant parameters as well as the tuner display. It is also possible to have Tuner indication via the lightring on the Konnekt unit. This is excellent for stand-alone applications.

The Tuner page
Let us take a look at the Tuner page in the TC Near Control panel.



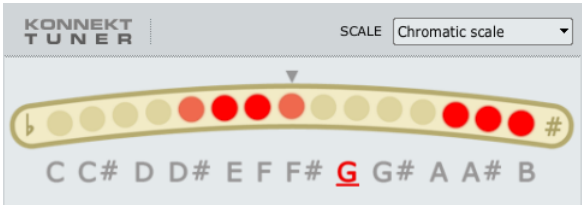
1 Tuner Indication.
In strobe mode: Three LEDs are always lit. If the played note is too low the LEDs run from right to left. Opposite if the pitch is too high.

In normal mode: Three green LEDs in center position indicates that the played note is in pitch.

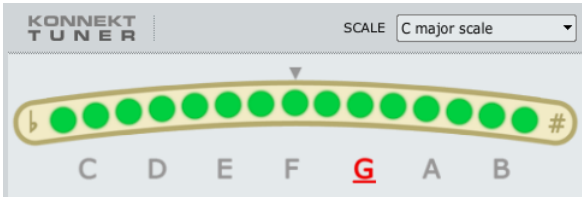
2 Note indication
The displayed notes reflect the selected scale mode. In the example above all 8 pitch notes are indicated because the C-Major scale mode is selected (see also #8).

3 Mode selector
Click to switch between Strobe and normal mode.

Strobe mode: Sections of three red LEDs will slide left, when the played note is too low, and right when it is too high.



...out of tune (Chromatic scale-mode selected)



...in tune (C major scale-mode selected)

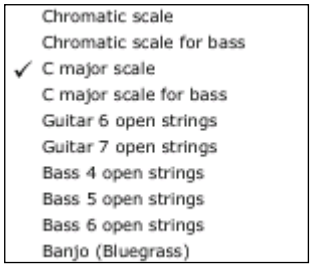
4 Assign to lightring
Assign to lightring. If you would like the lightring on the Konnekt Live front panel to act as tuner display. E.g. for stand-alone applications.

5 Play tone
Press PLAY TONE if you want to tune acoustically to a reference tone. The played note is "A" according to the set pitch (default 440Hz).
The level of the tone can be adjusted using the small "speaker" handle located just below the PLAY TONE button.
If "assign to lightring" is activated the level of the reference tone can be adjusted via the Source Level encoder.

6 Pitch
Sets the reference frequency. Default value is 440Hz and the range is from 438 to 445.

7 Mute
Press to mute the output of the tuner. Excellent if you need to tune visually only.

8 Scale modes
The following scale modes are available via the drop down menu:



APPENDIX - BUS POWER NOTES

Bus Power

Konnekt LIVE is able to work with FireWire bus-power. With FireWire bus-power the device is powered directly from the FireWire connection and you do therefore not need to use the external power supply (included with Konnekt).

There are a few things to be aware of regarding bus power:

4-pin FireWire connectors
Not all FireWire ports are able to provide bus power at all. Laptop computers with 4 pin connectors do not provide bus power.

Several Konnekts on a single FireWire bus
If you run more than one Konnekt device on a FireWire bus, only one of them can be bus-powered; the others require power from the supplied external power supply.

Insufficient bus-power
Some laptop computers, even those with 6-pin connectors, do not provide enough bus-power for a single Konnekt unit to run properly. If you experience problems, please use the provided external power supply as the first effort to solve the problem.

APPENDIX - ASIO CHANNEL NAMES

This page describe how the Konnekt ASIO channels distribute according to the selected sample rate.

Konnekt LIVE

44.1 - 48 kHz

Inputs

1 Mic inst / line 1
2 Mic inst / line 2
3 Line 3 / L
4 Line 4 / R
5 Fabrik C Live channel L
6 Fabrik C Live channel R
7 Fabrik R Live reverb L
8 Fabrik R Live reverb R
9 ADAT 1 / optical L
10 ADAT 2 / optical R
11 ADAT 3
12 ADAT 4
13 ADAT 5
14 ADAT 6
15 ADAT 7 / Coaxial L
16 ADAT 8 / Coaxial R

Outputs

1 Line 1 / Main L
2 Line 2 / Main R
3 Line 3 / L
4 Line 4 / R
5 Fabrik C Live channel L
6 Fabrik C Live channel R
7 Fabrik R Live reverb L
8 Fabrik R Live reverb R
9 ADAT 1 / optical L
10 ADAT 2 / optical R
11 ADAT 3
12 ADAT 4
13 ADAT 5
14 ADAT 6
15 ADAT 7 / Coaxial L
16 ADAT 8 / Coaxial R

88.2 - 96 kHz

Inputs

1 Mic inst / line 1
2 Mic inst / line 2
3 Line 3 / L
4 Line 4 / R
5 Fabrik C Live channel L
6 Fabrik C Live channel R
7 Fabrik R Live reverb L
8 Fabrik R Live reverb R
9 ADAT 1 / optical L
10 ADAT 2 / optical R
11 ADAT 3
12 ADAT 4
13
14
15 Coaxial L
16 Coaxial R

Outputs

1 Line 1 / Main L
2 Line 2 / Main R
3 Line 3 / L
4 Line 4 / R
5 Fabrik C Live channel L
6 Fabrik C Live channel R
7 Fabrik R Live reverb L
8 Fabrik R Live reverb R
9 ADAT 1 / optical L
10 ADAT 2 / optical R
11 ADAT 3
12 ADAT 4
13
14
15 Coaxial L
16 Coaxial R

176.4 - 192 kHz

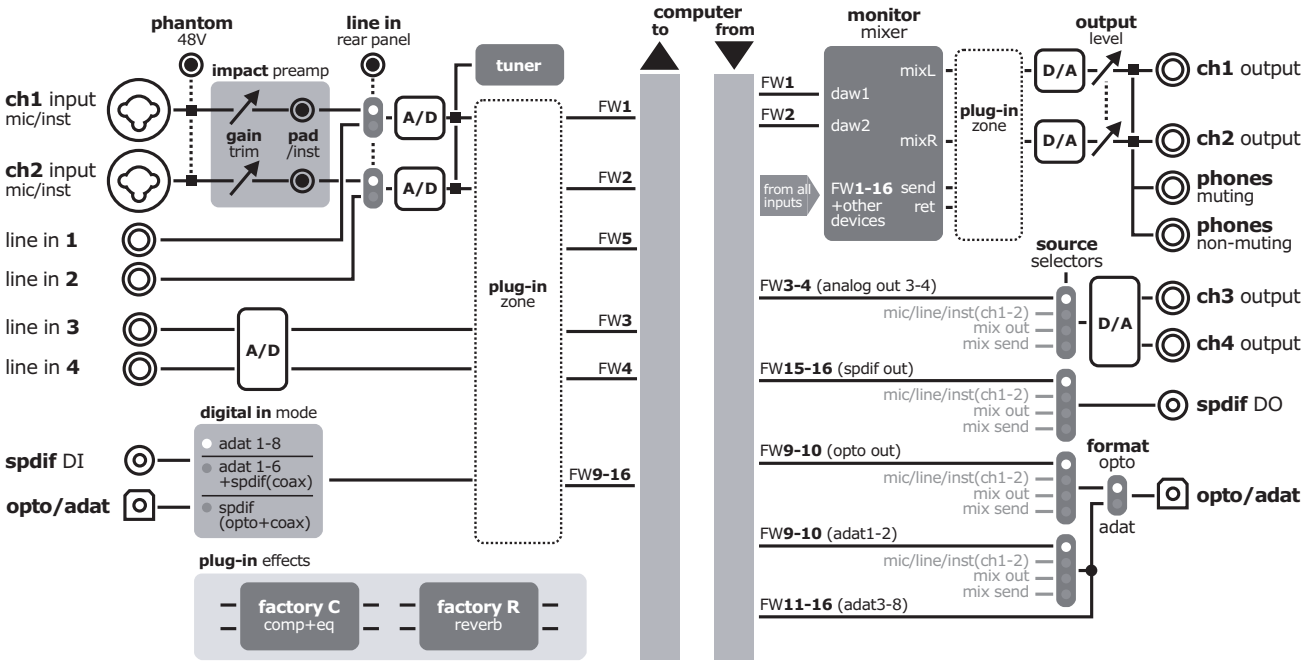
Inputs

1 Mic inst / line 1
2 Mic inst / line 2
3 Line 3 / L
4 Line 4 / R
5
6
7
8
9 Optical
10
11
12
13
14
15 Coaxial
16

Outputs

1 Line 1 / Main L
2 Line 2 / Main R
3 Line 3 / L
4 Line 4 / R
5
6
7
8
9 Optical
10
11
12
13
14
15 Coaxial
16

KONNEKT LIVE - SIGNAL FLOW



APPENDIX - FAQ

TC Near prevents computer standby mode
Before setting your computer in standby mode the TC Near control panel must be shut down. Computers handle standby mode and hibernation in different ways. To prevent instability on the audio interface after the computer is turned back on, the TC Near control panel must be closed. Most likely you will also need to close you host application (Cubase or Logic or ...)

Shortcut keys

The various main pages can be accessed using the following shortcut keys:

Function	**Press**
Device pages	
Mixer	= M or 1
Setup	= S or 2
Fabrik C	= C or 3
Fabrik R	= R or 4
About	= A or 5
Monitor mix on/off	= CTRL + M
System settings page	= CTRL + S
Alternate between devices	= CTRL + 1 to 4
System Settings	= CTRL + S

APPENDIX - DICE BACKGROUND

The Konnekts use the brand new TC developed DICE II digital interface chip from TC Applied Technologies. The DICE II chip provides a very stable digital clock to ensure jitter free digital signal flow all the way through the device.

Digital sound quality is not just "digital sound quality": having a stable digital clock is crucial to the sound quality.

Get perfect alignment of all your digital signals
With integrated JET(tm) technology the Konnekt is able to perfectly align all digital signals from external digital sources. This means that all supported digital formats will be aligned to ensure maximum digital quality.

JET - patent pending. Next generation of jitter elimination and sync handling, based on experience from TC flag ship System 6000, EQ station and AIR speakers.

DICE II has been specially developed for high performing digital interfaces S/PDIF, ADAT, 1394 and AD/DA. DICE II is based on many years of research and experience from making products for the top professional market including studios and broadcast industry.
The DICE II's hardware based FireWire audio streaming engine ensures robust, glitch free performance, independent of how many channels are being streamed.

APPENDIX - TECHNICAL SPECIFICATIONS

Digital Inputs and Outputs

Connector (S/PDIF):	RCA Phono, 75 Ohm
Formats (S/PDIF and TosLink) *1) :	S/PDIF (24 bit), IEC 958, Pro-status bits
Connector (ADAT® or TosLink) *2):	Optical Pipe
Format (ADAT®) *3):	8-ch. @ 48 kHz, 4-ch. SMUX @ 96 kHz
FireWire:	IEEE 1394a, S400, IEC 61883
Digital IO Engine:	TC DICE II, handling all IO formats

Clock and Jitter

Internal Sample Rates	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz
External Sample Rates:	43 to 193 kHz, jitter rejection at all rates
Jitter Rejection Engine:	JET™ technology in TC DICE II
Jitter Rejection Filter:	< -3 dB @ 10 Hz, < -100 dB @ 600 Hz
DIO Interface Jitter:	< 1 ns peak, BW: 700 Hz to 100 kHz
AD/DA Conversion Jitter:	< 42 ps RMS, BW: 100 Hz to 40 kHz
Digital Output Phase (stand alone and across network):	< 0.5 % of sample period
Input Slip Sample Tolerance (all DIs):	+50 % to -50 % of sample period
Processing Delay DIO @ 96/48 kHz:	0.15/0.3 ms
Frequency Response DIO:	DC to 23.9 kHz ± 0.01 dB @ 48 kHz

Line Inputs Ch. 1,2,3,4 *4)

Connectors:	1/4” Phone Jack (balanced)
Impedance, Bal/Unbal:	20 kOhm/25 kOhm
Full Scale Input Level @ 0 dBFS:	+13 dBu
THD+N:	< -100 dB (0.001%) @ 1 kHz, -1 dBFS
SNR:	>111 dB(A), >108 dB, 20 Hz to 20 kHz
Freq. Response:	+0/-0.5 dB, 20 Hz to 20 kHz
Crosstalk:	< -100 dB, 20 Hz to 20 kHz

ADC

A to D Conversion:	24 bit, 128 x oversampling bitstream
A to D Delay:	0.68 ms / 0.63 ms @ 44.1 kHz / 48 kHz

Mic. Inputs Ch. 1,2

Connectors:	Neutrik Combo (XLR)
Sensitivity Full Range Pad on/off:	-10/+10 dBu <> -52/ -32 dBu
Total pre-amp gain:	62 dB
Impedance, Pad on/off:	2000/1300 ohm
NF @ Rg = 150 ohm, Max. Gain:	< 4 dB
EIN @ Rg = 150 ohm, Max. Gain:	< -127 dBu
THD+N, Min. Gain:	< -100 dB (0.001%) @ 1 kHz, -1 dBFS
SNR, Min. Gain:	>109 dB(A), >106 dB, 20 Hz to 20 kHz

Inst. Inputs Ch. 1,2

Connectors:	Neutrik Combo (1/4” Phone Jack)
Sensitivity Range:	-25 dBu <> +17 dBu
Total pre-amp gain:	42 dB
Impedance:	1 Mohm
THD+N, Min. Gain:	< -100 dB (0.001%) @ 1 kHz, -1 dBFS
SNR, Min. Gain:	>107 dB(A), >104 dB, 20 Hz to 20 kHz
Crosstalk:	< -100 dB, 20 Hz to 20 kHz

Monitor/Line Outputs Ch. 1,2,3,4 *5)

Connectors:	1/4” Phone Jack. Ground sensing design.
Impedance:	100 Ohm
Level Range (Ch. 1,2):	-40 dBu <> +12 dBu (analog gain scale)
Fixed Full Scale Range (Ch. 3,4):	+12 dBu
THD+N:	< -94 dB (0.002%) @ 1 kHz, -1 dBFS
SNR:	>111 dB(A), >108 dB, 20 Hz to 20 kHz
Freq. Response:	+0/-0.1 dB, 20 Hz to 20 kHz
Crosstalk:	< -100 dB, 20 Hz to 20 kHz

DAC

D to A Conversion:	24 bit, 128 x oversampling bitstream
D to A Delay:	0.70 ms / 0.65 ms @ 44.1 kHz / 48 kHz

Headphones Output (Ch. 1/2)

Connectors	2 x 1/4” Phone Jack (Stereo)
Impedance	80 Ohm
Gain Level Range:	-80 dBu <> +16 dBu @ 300 ohm (analog gain scale)
THD+N:	< -94 dB (0.002%) @ 1 kHz, -1 dBFS
SNR:	>103 dB(A), > 100 dB, 20 Hz to 20 kHz
Freq. Response:	+0/-0.1 dB, 20 Hz to 20 kHz
Crosstalk:	< -100 dB, 20 Hz to 20 kHz
Power @ 40 Ohm Load:	200mW
Power @ 600 Ohm Load:	93mW

EMC

Complies With:	EN 55103-1 and EN 55103-2, FCC part 15, Class B, CISPR 22, Class B

Safety

Certified To:	IEC 60065, EN 60065, UL6500 and CSA E60065 CSA FILE #LR108093

Environment

Operating Temperature:	32° F to 122° F (0° C to 50° C)
Storage Temperature:	-22° F to 167° F (-30° C to 70° C)
Humidity:	Max. 90 % non-condensing

Control Interface

MIDI:	In/Out: 5 Pin DIN
FireWire (DAW):	IEEE 1394a, IEC 61883

General

Dimensions:	9.5" x 1.75" x 9" (241.5 x 44 x 226 mm)
Weight:	3.3 lb. (1.5 kg)
Finish:	Acrylic front panel. Plated and coated steel back plate. Anodized aluminum cover.
PPM Meter (Ch. 1,2):	3 LED's pr. channel.
Power Supply (Included)	12V DC, Adapter for 90 to 240 VAC, 50 to 60 Hz (auto select)
FireWire Bus Powered:	8 to 30 VDC
Power Consumption:	<14 W
Warranty Parts and labor:	1 year

Please note: Technical specifications are subject to change without notice.