



## TK AUDIO BC1-S

### Stereo Bus Compressor

Congratulations on buying one of the most transparent stereo bus compressors ever made, it's manufactured and assembled by hand in Sweden and thoroughly tested before leaving the factory.

The BC1-S provides smooth bus compression associated with one of the most famous bus compressors from the mid 80's. Mixing engineers call it the "magic glue" when transparent compression strengthens mixes without compromising clarity. The BC1-S provides just that kind of compression bringing cohesion and punch; equally useful for drum bus and instrument compression.

The built-in blend control makes it easy to apply parallel compression by adjusting the mix of dry and compressed signal. A mute switch is provided for muting the dry signal making it possible to adjust the compression without changing the blend control.

A switchable side chain filter can be applied at 150Hz which makes the BC1-S less responsive to low frequency energy. The external side chain input makes it possible to have the BC1-S pump to an external source.

The BC1-S will add the "magic glue" and make your mixes sound punchy and coherent. All controls are stepped for 100% repeatability.

### THE PARAMETERS:

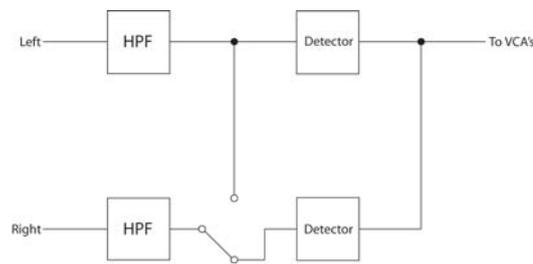
**THRESHOLD:** -20dB to +20dB in 41 steps. The threshold adjusts the level above where the signal is reduced. A lower threshold means a larger portion of the signal will be treated. For optimal results make sure that the input level is high enough.

**RATIO:** 1.5:1 / 2:1 / 4:1 / 10:1 / Hard. The ratio determines the input/output ratio for signals above the threshold. For example, a 4:1 ratio means that a signal overshooting the threshold by 4 dB will leave the compressor 1 dB above the threshold. At the 1.5:1 and 2:1 setting a relatively subtle soft knee compression is applied. At 4:1, the compression becomes more obvious, and at 10:1 and Hard ratio, the BC1-S is basically a peak limiter.

**HPF:** When engaged a gentle 6dB/octave high pass filter at 150Hz is applied to the internal or external side chain signal, making the compression less responsive to low frequency energy. In most situations the HPF button should be engaged.

**EXT SC:** Engages the external side chain input on the back of the BC1-S. By using the external side chain another signal can control the behavior of the compressor; most commonly used by DJs for ducking / lowering the music volume automatically when speaking. It's also effectively used for ducking the bass track or background whenever the kick drum hits by sending the kick track to the external sidechain input. For more information please read the section about side chain compression.

**L+R:** When engaged the side chain signals are summed to mono before hitting the threshold detectors meaning that the compressor will be 6dB more sensitive to the centre information of the mix. That usually means kick drum, snare drum, bass guitar and lead vocals. In most cases L+R should not be used.



**ATTACK:** UF (ultrafast) / 0.1 / 0.3 / 0.6 / 1 / 3 / 10 / 30 / 60 / 120ms. The attack setting defines the time it takes for the compressor to decrease the gain and reach the level determined by the ratio. Faster attack settings means better control of the transient part of the sound, but if set too fast the compressor might cut away more transients than wanted. A good starting point is 10ms.

**RELEASE:** 50 / 100 / 300 / 600ms / 1.2S / Auto. The release setting defines the time it takes for the compressor to increase the gain to the level determined by the ratio, once the level has fallen below the threshold. Higher release settings will result in a less intrusive compression with lower distortion, but if set too high the compression might not be effective enough. A good starting point is 100ms or Auto.

**AUTO RELEASE:** Makes the release function time dependent on the duration of the signal peak. In practise it's a fire-and-forget setting that behaves the same way as a classic British bus compressor used by many since the 80's.

**GAIN REDUCTION METER:** The metering shows the average level (RMS) of the gain reduction which differs from the peak level meters of most plug-ins - comparatively it's slower and in practise it means that a little goes a long way. The proper amount of compression on a mix is usually done when the needle moves in the middle of 0 and 4. Higher ratio and faster release settings will result in a more obvious compression/limiting that sometimes is too fast for the needle to show. Always use your ears first and just use the metering as a quick reference.

**MAKE-UP:** 0 to +20dB of gain in 41 steps to balance the compressed signal level against the input signal level.

**COMP IN:** Engages and disengages the compressor. Should be used a lot to control how the compressor is affecting the sound.

**STRAIGHT MUTE:** When engaged the uncompressed signal is muted; useful when doing parallel compression and you just want to listen to the compressed signal.

**BLEND:** Straight to compressed sound in 21 steps. Turning the knob clock wise will mix the original signal with the compressed signal. For more information please read the section about parallel compression.

## **STARTING PRESETS**

### **MIX BUS**

The main purpose of the BC1-S is to act as a bus compressor and it does it very well.

### **AUTO RELEASE MAGIC**

One of the true unique features of the BC1-S is the auto release setting and it's ability to glue the mix together. The auto release is a good starting point when setting up the compressor for 2 bus duty. Adjust the Threshold until 2 to 3 dB of compression is shown by the meter. It's all it takes to glue the mix together.

Threshold:  $\pm 0$  dB

Ratio: 1.5:1, 2:1 or 4:1

HFP: ON

Attack: 10 ms

Release: Auto

Make-up: 8 o'clock

Blend: Comp

### **POP MIX COMPRESSION**

For more obvious compression a fast release should be used. Adjust the Threshold until it shows about 3 to 4 dB of compression on the loudest parts of the song.

Threshold:  $\pm 0$  dB

Ratio: 4:1

HFP: ON

Attack: 10 ms

Release: 100 or 300 ms

Make-up: 9 o'clock

Blend: Comp

### **SLAMMING 2 BUS COMPRESSION**

Depending on the source material sometimes the compression can effectively slam the mix. It usually works for electronic music with fast transients that need to be tamed. The result can be a bit fatiguing but it sure can inject energy when needed rendering a super processed mix.

Threshold: 5 dB

Ratio: Hard

HFP: ON

Attack: 3 ms

Release: 50 ms

Make-up: 9 to 10 o'clock

Blend: Comp

## **DRUMS**

The BC1-S can go from subtle to pretty slamming compression on a drum bus and here are a few good starting points. Make a habit of adjusting the Make-up gain until the compressed signal is equally loud as the uncompressed signal, and toggle the Comp in button to listen what's actually happening to the drums when they are compressed.

### **A TOUCH OF DRUM COMPRESSION**

Adjust the Threshold until the compression meter shows about 2 dB of gain reduction. The effect should be very subtle and just make the drums come together without adding or altering the kick or snare drum.

Threshold: 0 to +5 dB

Ratio: 2:1

HFP: ON

Attack: 3 ms

Release: AUTO

Make-up: 9 o'clock

Blend: Comp

### **TIGHT DRUM COMPRESSION**

To tighten up the drum bus without altering the drums too much, a low ratio should be used. Adjust the Threshold until about 3 or 4 dB of compression is done.

Threshold: -5 to -10 dB

Ratio: 2:1

HFP: ON

Attack: 10 ms

Release: 100 ms

Make-up: 9 to 11 o'clock

Blend: Comp

### **HARD DRUM COMPRESSION**

Applying hard drum compression will alter the sound of the snare drum and cymbals but in a dense mix that might be the right thing to do. Adjust the Threshold until about 5 to 6 dB of compression is shown.

Threshold: -5 to -10 dB

Ratio: 4:1

HFP: ON

Attack: 10 ms

Release: 50 or 100 ms

Make-up: 12 to 1 o'clock

Blend: Comp

## **SLAMMING DRUM COMPRESSION**

To slam the drum bus usually more coloured compression is used, but utilizing the Hard Ratio setting can render some pretty interesting results. Start by setting the Make-up to 1 o'clock because a lot of make-up gain will be used. Then adjust the Threshold until 10 to 12 dB of compression is shown and try a couple of different attack settings. For a little smoother compression set the release to 100ms. A cool mixing trick is to set the Blend setting to Straight (meaning no compression) and then slowly turn it clock-wise as the song is approaching the chorus. It will make the drums go more and more slamming the closer they get to the chorus adding some excitement to the mix.

Threshold: -5 to -10 dB

Ratio: Hard

HFP: ON

Attack: From UF to 30 ms

Release: 50 ms

Make-up: 12 to 3 o'clock

Blend: Comp

## **VOCAL RIDING**

Lead vocals usually need a bit of volume automation to cut through a dense mix - an important and time consuming job. Due to its ultra transparent compression the same job can automatically be done with the BC1-S. The trick is to use a low Ratio and fast release, and set the Threshold until about 4 dB of compression is done.

Threshold: -5 to -10dB

Ratio: 1.5:1 or 2:1

HFP: ON

Attack: 10 ms

Release: 50 ms

Make-up: 9 o'clock

Blend: Comp

## **GUITAR SOLO GAIN RIDING**

Similar settings can be used to gain ride a guitar solo or other solo instruments.

Threshold: -5 to -10dB

Ratio: 1.5:1 or 2:1

HFP: ON

Attack: 10 or 30 ms

Release: 50 or 100 ms

Make-up: 9 o'clock

Blend: Comp

## **BASS RIDING**

Bass guitar can be a pretty tricky animal to harness. Often more coloured compression is used, but due to the transparent nature of the BC1-S it can very effectively even out stray notes that are played too loud or too soft without adding any pumping or distortion. The result is a more coherent bass guitar that still sounds like a bass guitar. Similar settings can effectively be used on bass synthesizers as well. Adjust the Threshold until 3 to 5dB of compression is shown by the metering.

Threshold: 3 o'clock

Ratio: Hard

HFP: OFF (note that the high pass filter is deactivated)

Attack: 3 ms

Release: 300 ms

Make-up: 10 o'clock

Blend: Comp

## **PARALLEL COMPRESSION WITH THE BC1-S**

Parallel compression is a great way of injecting more nerve and energy into a mix or instrument, without affecting the transients or the overall sound too much. The trick is to make the compressor work pretty hard - around 8 to 16dB on the meter - and blend the compressed signal with the original sound. To get the best resolution set the Blend knob to Comp (the fully clock wise position). Adjust the Make-up knob until the compressed signal sounds equally loud or slightly louder than the original signal. Check by toggling the Comp In button. Then use the Blend knob to set the proper amount of parallel compression, usually somewhere between the fully counter wise position and 12 o'clock. Always toggle the Comp In button to compare it with the original signal. Use the Straight Mute button to check the compressed signal without altering the Blend control.

## **2 BUS WITH SOFT PUNCH PARALLEL COMPRESSION**

There is a great way to add some energy without affecting the overall sound too much using long attack time and auto release. Adjust the Threshold level until the compression meter shows roughly 8dB of compression.

Threshold: 0 to -5 dB

Ratio: Hard

HFP: ON

Attack: 30 or 60 ms

Release: AUTO

Make-up: 9-11 o'clock

Blend: 9-12 o'clock

## **2 BUS WITH SNAPPY PARALLEL COMPRESSION**

For a more snappy compression use slow attack and one of the faster release settings and Ratio 10:1 - adjust the Threshold until there is about 8 to 12dB of gain reduction.

Threshold: -5 to -10 dB

Ratio: 10:1

HFP: ON

Attack: 30 or 60 ms

Release: 50, 100 or 300 ms

Make-up: 12 o'clock

Blend: 9-12 o'clock

## **2 BUS WITH SLAMMING PARALLEL COMPRESSION**

Sometimes a mix needs an energy injection and what a better way to do it than with some slamming parallel compression. Usually a more coloured compression is preferred but tickled the right way the BC1-S can work wonders.

Adjust the Threshold until the compression meter move roughly between 8 and 12dB. For even more effect lower the Threshold until the compression meter moves between 12 and 16dB. Adjust the Blend until proper amount of parallel compression is achieved.

Threshold: -5 to -10 dB

Ratio: Hard

HFP: ON

Attack: 10 or 30 ms

Release: 50 or 100 ms

Make-up: 3 o'clock

Blend: Between 9 and 12 o'clock

## **EXTERNAL SIDE CHAIN COMPRESSION**

The external side chain input on the back is an unbalanced stereo input and can be used to control the compressor with an external signal. It's perfectly fine to connect a balanced cable if the intention is to feed the compressor with a mono signal, just make sure that the L+R button isn't activated - otherwise the hot and cold signals will even out each other.

## **BASS TRACK DUCKING BY KICK DRUM**

A classic mixing technique is to have the kick drum duck the bass track. It's done by sending the bass track into the compressor and the kick drum into the external side chain input. Then try the settings below. Adjust the Threshold until about 2 dB of compression is shown. This will make room for the kick drum without having to back down the bass track.

Threshold:  $\pm 0$  to 5 dB

Ratio: 10:1

HFP: OFF (note that the high pass filter is deactivated)

EXT SC: ON (note that the external side chain is activated)

Attack: 1 ms

Release: 50 ms

Make-up: 0

Blend: Comp

## **DUCKING DANCE PADS WITH KICK DRUM**

Another classic trick is to duck the pads and synthesizer parts with the kick drum. Adjust the Threshold until 1 to 4 dB compression is shown and try different release settings to find out which works best with the tempo of the song. Naturally the release time can't be perfectly matched with the tempo of the song, but that's the charm of it.

Threshold:  $\pm 0$  to 5 dB

Ratio: 10:1

HFP: OFF (note that the high pass filter is deactivated)

EXT SC: ON (note that the external side chain is activated)

Attack: 1 or 3 ms

Release: 50, 100, 300 or 600 ms

Make-up: 0

Blend: Comp

**Always unplug the unit before you remove the lid!**

### **Grounding:**

There is a jumper that connects the audio ground to the signal ground. If you have hum, start with removing this jumper and see if the hum goes away. The jumper is located in the right corner of the big main circuitboard near the front panel. Marked "chassi to audio ground".

### **115v or 230v:**

There is a voltage selector inside the unit, located in the upper right corner on the main circuit board. The text on the switch indicates which voltage that is selected. Remember to change the main fuse when you switch the voltage.

100mA, slow-blow for 230v

200mA, slow-blow for 115v

**Always unplug the unit before you remove the lid!**

## EU - Declaration of conformity / Överensstämmelseintyg

### Product

TK Audio BC1-S, Stereo bus compressor  
115v - 200mA  
230v - 100mA

### Manufacturer / Tillverkare

Thomas Kristiansson  
Musikverkstan / TK Audio  
Falkenbergsgatan 10  
30233 Halmstad  
Sweden



Halmstad, March 2013

### Declaration of conformity

I declare under my sole responsibility that this product, to which this declaration relates, is in conformity with the following standards:

EN55013, EN55020:2002, EN61000-3-2, EN61000-4-2 and EN60065

Following the provision of 73/23/EEC, 89/336/EEC and 93/68/EEC.

### Överensstämmelseintyg

Härmed intygas helt på eget ansvar att denna produkt, vilket detta intyg avser, uppfyller följande standarder:

EN55013, EN55020:2002, EN61000-3-2, EN61000-4-2 och EN60065

Following the provision of 73/23/EEC, 89/336/EEC och 93/68/EEC.