bx_console Focusrite SC

Plugin Manual

bx_console Focusrite SC is part of the growing line of Brainworx TMT console emulation plugins. More details on our patent-pending TMT (Tolerance Modeling Technology) inside this manual.
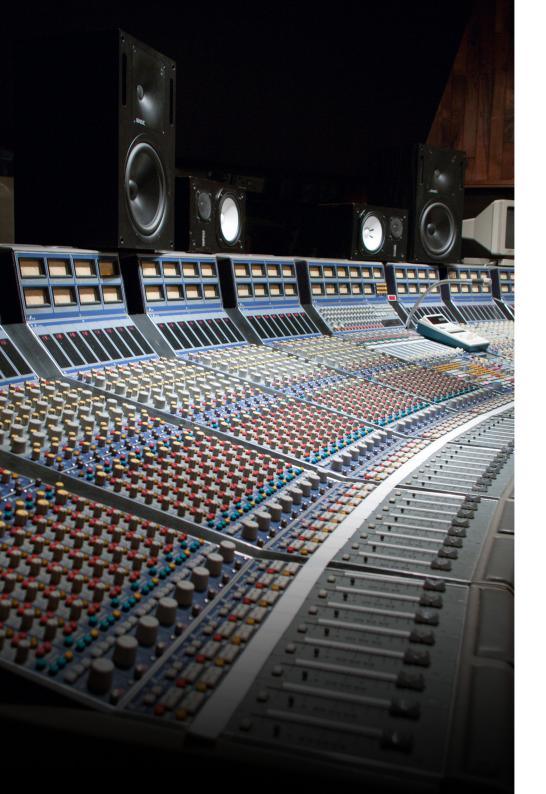
Developed by Brainworx in close partnership with

Focusrite audio engineering Ltd. and distributed by Plugin Alliance.

BRAINWORX   Focusrite   PLUGIN ALLIANCE

Some History

We're proud to welcome Focusrite's famous console to our platform. The birth of Focusrite began in 1985 when Sir George Martin, otherwise known as the fifth Beatle, approached Rupert Neve to inquire about custom modules for AIR Montserrat. His studio regularly saw everyone from Paul McCartney, Elton John, Michael Jackson, Stevie Wonder, Eric Clapton and countless others. George discussed with Rupert a design for a top of the line mic pre and an EQ with low noise and an extra wide bandwidth with the main goal of it being as musical as possible. What came out of this vision was the ISA-110, featuring transformer-coupled mic pre amp with a four band EQ and highpass and lowpass filters. Word travelled fast and these standalone units could sound be found in studios across the planet. With the massive success achieved by the ISA-110 and the companion ISA-130 compressor/limiter/de-esser module, a ton of orders quickly emerged.

In the late 80's Focusrite spared no expense when working on their ambitious studio desk but as costs rapidly reached astronomical levels, the rights to the console were acquired by Phil Dudderidge of Soundcraft Electronics and the Focusrite Studio Console was finally completed by his team. From the work on ISA-110 and ISA-130, Phil's engineers crafted equally successful designs, the ISA-215, 220 and 430. Since then, the Focusrite Studio Console has gained an enviable reputation for dynamic punch and clinical equalisation and firmly established itself as the mixing desk of choice in studios all over the world. The list of records made on this desk includes everyone one from Green Day, No Doubt and tons of others.
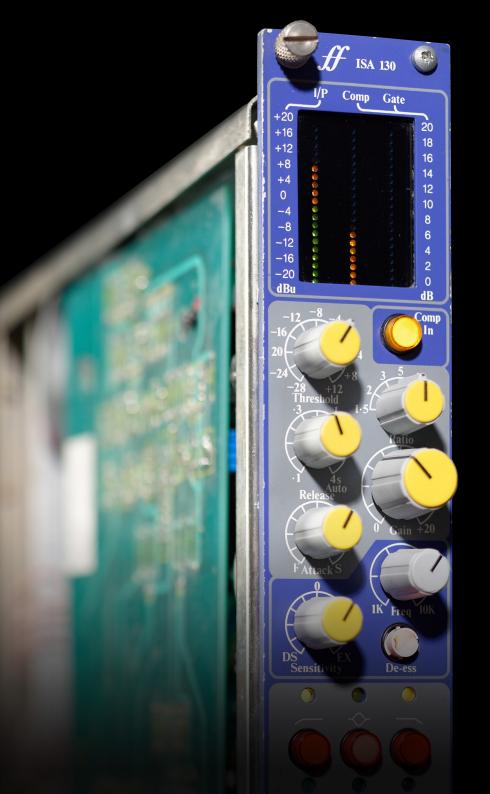
Inside the ISA range is an impeccably designed mic pre with a Lundahl 1538 input transformer and a 4 band EQ based on the 31106 EQ module built for the A7971 console by Neve. This transformer adds a rather distinct character to the sound which really can't be emulated otherwise and the EQ offers a truly transparent signal path. The ISA 130 module was also developed by Rupert Neve and Trevor Stride, comprising of a single-channel, VCA-based compressor and limiter, a De-Esser and an Expander/Gate.

True and Faithful Emulation of the Analog Hardware in the Digital World
The plugin version of this legendary piece of gear, bx_console Focusrite SC continues the tradition started by our bx_console N and the SSL 4000 Series consoles in that it offers 72 channels based on the pioneering Tolerance Modeling Technology (TMT, patent-pending). Every one of bx_console Focusrite SC's 72 channels offers a different Focusrite channel by modeling the slight channel-to-channel variances amongst the analog components. Run a different channel across your entire mix and you can easily get the depth, width and punch that the original analog Focusrite Studio Console provided –– all inside your DAW!

Most channel strip plugins on the market emulate a single channel of the desk that they are modeled from. So no matter how many instances of that single channel plugin you use in your mix, you get the same exact equalization and compression curves, along with identical frequency and phase response. And even if you use different control settings for each plugin on a track, you still end up with a flat, narrow and two-dimensional digital sound.

On the other hand, every channel on a large-format, analog mixing console sounds different, often yielding a more complex and dimensional sound. Our bx_console Focusrite SC accomplishes just this by using Brainworx's proprietary, patent-pending Tolerance Modeling Technology to accurately replicate the variations found in the values of over 150 individual electric components specified by the original console designer. This ground-breaking technology creates the small channel-to-channel variances in phase and frequency responses that you would get in an actual analog mixing desk.

And There is More!

Much like with the other plugins in Brainworx's expanding line of mixing-console emulations, the bx_console Focusrite SC is stacked with an arsenal of extra features designed by Dirk and his team of award-winning design engineers that make the plugin even more powerful than the original hardware. We added a Total Harmonic Distortion (THD) control which you can use to dial in some color and saturation along with a Virtual Gain control that can be used to add simulated noise to get an extra analog vibe to your tracks.

Our bx_console Focusrite SC is officially endorsed and approved by Focusrite so you can rest assured that we are offering nothing but the highest quality when it comes to the digital replica of their original analog hardware. Try this channel strip in your mix today and experience the transparency, power and control of the world famous Focusrite console!

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Compressor Section

1 Link

When linked, the compressor will react the same for both channels of a stereo instance.

2 Comp In

Switches the Compressor section On or Off.

3 Threshold

Sets the threshold level at which the compressor begins to attenuate the signal, per the ratio setting.

4 Ratio

Sets the ratio at which the signal below a given threshold is compressed. Turning this fully clockwise switches to limiter mode.

5 Release

Controls the time the signal needs to recover from compression when the level falls below the Threshold. Turning this fully clockwise switches to auto release mode.

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1 Gain

Boosts the signal post-compression, to make up for gain lost due to compression.

2 Attack

Determines how quickly compression is applied once the level of the source signal has risen above the threshold.

3 Mix

Controls the amount of uncompressed signal being blended with the compressed signal, effectively providing the option of parallel compression.

100% = blend to compressor output
0% = blend to uncompressed signal

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De-Esser Section

1 Sensitivity

Controls the amount of emphasis or de-emphasis, that the De-Esser/ Exciter circuit applies to the input signal. The centre position is neutral/off.

2 Frequency

Controls the frequency of the De-Esser bandpass, which is what the De-Esser will respond to.

3 De-Esser Listen

The De-Esser Listen option lets you hear the bandpassed side-chain signal that the De-Esser/Exciter receives, and to which it will react by applying gain reduction or expansion on the original (wideband) signal.

4 De-Ess

Switches the De-Esser section On or Off.

5 De-Esser / Exciter Activity LED

Indicates whether and how much the De-Esser/Exciter affects the input signal (Gain reduction or addition) by the intensity of its glowing.

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Expander / Gate Section

1 Link

When linked, the gate/expander will react the same for both channels of a stereo instance.

2 Gate In

Switches the gate section On or Off.

3 Threshold

Determines the level at which the gate opens, or at which gain reduction finishes when in Expander mode. The higher the threshold, the more low-level noise is reduced.

4 Range

Determines how much the signal is attenuated when the gate is closed.

5 Hold

Controls how long the gate stays open after the input signal drops below the threshold to close the gate. When the time has elapsed the gate closes with the same speed as set by the release.

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1 Release

This is the time it takes to close the gate after the level has fallen below the threshold and the Hold time has elapsed.

2 Fast Attack

Switches to a fast attack time of 50μs.

3 Expand

Causes the Gate to function as an expander, which will attenuate the signal with a fixed ratio when falling below the threshold with an over easy characteristic.

4 Ext Key

Switches the Gate sidechain input to an external key signal. You can route an External Sidechain signal to the Gate Section if your DAW supports this.

5 Key Listen

Switch on to hear the sidechain of the Gate section, including the effect of the filters (if routed to the gate sidechain).

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The three red switches select the position of the filters, High & Low-Pass Filters and Parametric Mid-Band, in the signal chain. Pressing once illuminates the small yellow LED on the left of the switch, indicating that the filter is sent to the sidechain of the Compressor. Pressing again illuminates the small green LED on the right of the switch, indicating that the filter is sent to the sidechain of the Gate. Pressing a third time illuminates both LEDs indicating that the filter is sent to the sidechain of the Compressor and Gate simultaneously (not possible if "Ext Key" is activated). Pressing a fourth time illuminates the actual switch (red), indicating that the filter is in the signal path. To deactivate the filter, simply press the switch a fifth time.

1 High-Pass Filter Position

Determines the position/state of the HP filter, either being in the compressor or gate sidechain, in both, or in the audio path before the VCA, or switched off completely.

2 Low-Pass Filter Position

Determines the position/state of the LP filter, either being in the compressor or gate sidechain, in both, or in the audio path before the VCA, or switched off completely.

3 Peak Filter Position

Determines the position/state of the Peak filter, either being in the compressor or gate sidechain, in both, or in the audio path after the VCA, or switched off completely.

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1 Low-Pass Frequency

Controls the Low-Pass Cut-Off Frequency.

2 High-Pass Frequency

Controls the High-Pass Cut-Off Frequency.

3 Peak Gain

Controls the Peak Filter Gain.

4 Peak Frequency

Controls the Peak Filter center Frequency.

5 Peak x10

Multiplies the frequency range shown on the bell EQ by 10 so that the range increases from 60-600 to 600-6000 Hz.

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Filter Section

1 Low-Pass Frequency

Controls the Low-Pass Cut-Off Frequency.

2 Low-Pass Filter On

Switch the Low-Pass Filter On or Off (via LED or Double-Click on knob).

3 High-Pass Frequency

Controls the High-Pass Cut-Off Frequency.

4 High-Pass Filter On

Switch the High-Pass Filter On or Off (via LED or Double-Click on knob).

5 Low-Pass Filter /3

Changes the Low-Pass Frequency range to 1.3 kHz - 5.3 kHz if engaged.

6 High-Pass Filter x3

Changes the High-Pass Frequency range to 60 Hz - 990 Hz if engaged.

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High-Mid Frequency (HMF) Band

1 HMF Band In

Switches the HMF Band On or Off.

2 HMF Gain

Controls the Peaking gain of the HMF Band.

3 HMF Q

Controls the Quality Factor of the HMF Band.

4 HMF Frequency

Controls the center Frequency of the HMF Band.

5 HMF Frequency x3

Changes the HMF Frequency range to 1.8 to 18.0 kHz if engaged.

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Low-Mid Frequency (LMF) Band

1 LMF Band In

Switches the LMF Band On or Off.

2 LMF Gain

Controls the Peaking gain of the LMF Band.

3 LMF Q

Controls the Quality Factor of the LMF Band.

4 LMF Frequency

Controls the center Frequency of the LMF Band.

5 LMF Frequency x3

Changes the LMF Frequency range to 120 to 1200 Hz if engaged.

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High Frequency (HF) Band

1 HF Band In

Switches the HF Band On or Off.

2 HF Gain

Controls the Filter Gain of the HF Band.

3 HF Frequency

Controls the Shelving Frequency of the HF Band.

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Low Frequency (LF) Band

1 LF Band In

Switches the LF Band On or Off.

2 LF Gain

Controls the Filter Gain of the LF Band.

3 LF Frequency

Controls the Shelving Frequency of the LF Band.

4 EQ Post

Determines the position of the EQ module, including HP and LP Filters. When engaged the EQ and Filters are after the dynamics, which is the default configuration.

5 All EQ

Switches all EQ Bands On or Off.

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Master Section

1 In Gain

Adjusts the Input Level of the plugin. Altering the Input Level affects the Dynamic section, so you may have to readjust your Compressor or Gate / Expander Threshold settings if you change this parameter.

2 V-Gain

The V-Gain simulates the noise typically present in analog circuits, whether it's from a Microphone Preamp in higher Gain settings, or an EQ / Dynamics circuit. To get the most realistic analog sound with bx_ console plugins, we recommend you use some noise on all your channels, then use the Expander / Gate to keep the console clean when signals are not present on channels. It makes a difference!

3 THD

Adds colorful Saturation and Density (on a per channel basis). The default setting is - 60dB. Use higher settings (up to -30 dB) for almost screaming distortion or dial down the Saturation to -120 dB for ultra-clean channels.

Tip:

Some heavier THD settings can make drums, guitars and vocals sound much rougher, which can add a certain vibe that is desirable for many styles of music. I loooove screaming consoles...

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1 Console Channel Numbers L&R (TMT Section)

Switches between 72 different Console Channels. In a Stereo instance, two adjacent Channel numbers will be displayed. Each channel has its own, different character! This is achieved by including about 150 resistor and capacitor tolerances in the modeling which correspond to the real-world component tolerance ranges, as specified by the component manufacturers and / or the hardware designers. TMT is Patent-Pending, a true Brainworx invention.

2 Phase Reverse

Inverts the Polarity of the signal.

3 Mute

Mutes the signal output.

4 Stereo Mode

• Analog: 2 different TMT channels.

• Digital: the same TMT channel used for both channels (L&R).

This button is only available on Stereo instances, and is the heart of Brainworx's patentpending Tolerance Modelling Technology (TMT). When ANALOG is activated, small inherent differences between the modeled componentry in each left and right channel will produce a pleasing, analog sound, as though one were working between two adjacent channels on an actual console. With the button switched to DIGITAL, the two Stereo channels will be identical in circuitry, providing a theoretically perfect, digital Stereo sound.

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1 Random One

Only the plugin instance you click on will switch to any unused channel number in that session randomly.

2 Random All

If you have many channels of bx_console Focusrite SC running in your mix session, you can make sure to be using different channel numbers for every single instance with a single mouse click now! In most hosts you can add a copy of the same plugin to every channel with a keyboard shortcut (for example click ALT on a Mac to put a bx_console plugin on every channel of your Pro Tools session automatically). Imagine opening 48 channels with one click and then randomizing all the channel numbers with a second mouse click. Done.

Tip:

One very cool way of using the RANDOM ALL feature is to finalize a mix and bounce it, then save the whole mix session. Now you can play back the song and click RANDOM ALL a few times on any instance of bx_console Focusrite SC, and you will notice that the "timbre" or tone of your mix will change ever so slightly, depending on the use or abuse of the individual EQs and Dynamics, of course. The more processing you apply, the more obvious the differences become.

Now by clicking through different randomized channel combinations you may actually find one that sounds a bit darker or brighter, a bit punchier or smoother than your original mix. Why not save 1 or 2 alternative mix sessions and bounce them, so your client can choose between 2 or 3 different "flavors" of the otherwise identical mix?

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1 Fader / Output Gain

Adjusts the Output Level of the plugin. You can drive the channel down a few dB here to compensate for heavy processing (EQ & Dynamics).

Metering

2 Metering Out/In

Switches between Input and Output Signal Metering. On the right side there is a PPM (Quasi-Peak) Meter with an extended EBU type scale ranging from -24 to +24 dBu. On the left side is a classic VU Meter on a -20 to +3 VU scale.

3 Compression Meter (Gain Reduction)

In Stereo channel configurations there are 2 dedicated meters per channel. If Stereo link is engaged, the compression is applied evenly on both channels and displayed in one meter.

4 Expansion/Gate Meter

In Stereo channel configurations there are 2 dedicated meters per channel. If Stereo link is engaged, the gating/expansion is applied evenly on both channels and displayed in one meter.

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Meter calibration

The reference value for both level meters can be adjusted via the corresponding text fields in the info screen, which can be accessed by clicking on the Brainworx / Focusrite logos.

By default, the PPM meter reference is set to 0 dBu = -20 dBFS.

The VU Meter is set to 0 VU = -10 dBFS, which in turn corresponds to 0 VU = +10 dBu in the default setting. Using the text fields, you can customize the meters according to the standard you are used to work with or depending on the 'hotness' of your material. Your settings will be stored for all instances and sessions. You can always go back to the default reference levels by clicking on the default buttons.

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Top Toolbar

1 Undo / Redo

You can undo and redo changes you made to the controls of the bx_console Focusrite SC plugin at any time. The UNDO / REDO will work for as many as 32 steps. This makes experimenting and tweaking knobs easy. If you don't like what you did… just undo it

2 Settings (A/B/C/D)

The bx_console Focusrite SC plugin offers four internal settings (A/B/C/D) which will be stored with every preset. So, one preset can contain up to four settings.

You may use similar settings with more or less compression or EQ boost in one setup /preset.

Now, the SETTINGS can be automated in your DAW! This way it is possible to use different sounds for your lead vocals or drums in various sections of the song. Automate the A/B/C/D settings, and you can still tweak knobs of the individual settings without overriding multiple parameters in your DAW, which would be time-consuming.

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1 Copy / Paste

To set up variations of similar sounds you don't have to dial in the settings several times.

Let's say you like your setting A and want to use the same sound, just with less compression, as setting B.

• Simply press COPY while you are in setting A.

• Switch to setting B by pressing 'B' in the settings section.

• Press PASTE, now setting B is identical to setting A.

• Reduce the compression on the B setting.

Now you can switch between A & B and decide which one sounds best or automate different settings for various sections of your session.

2 M/S Monitoring (for Stereo Channels only)

• Solo M: Solos the Mid (Sum) signal being processed by the plugin.

• Solo S: Solos the Side (Difference) signal processed by the plugin.

• Both disengaged: Standard stereo (L/R) processing output.

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1 V Gain ALL (-30 dB to +20 dB)

This parameter lets a user add an additional offset to the V Gain parameter of all the same console instances in his current session. Even with the offset, the original range of the V Gain parameter is never exceeded. If V Gain is explicitly set to "Off" (fully counter-clockwise), it will stay Off, even when V Gain ALL adds an offset.

Example 1

The V Gain is set to -95 dB and V Gain ALL is set to +20 dB. The effective V Gain will be -75 dB.

Example 2

The V Gain is set to -75 dB and V Gain ALL is set to +20 dB. The effective V Gain will be -70 dB. It is limited at the upper range.

Example 3

The V Gain is set to "Off" and V Gain ALL is set to +20 dB. The effective V Gain will still be Off.

The parameter only influences consoles of the same type, e.g. if set on bx_console Focusrite SC, it will not influence bx_console SSL 4000 G and other console plugins.

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1 THD ALL (-60 dB to + 30 dB)

This parameter lets a user add an additional offset to the THD parameter of all the same console instances in his current session. Even with the offset, the original range of the THD parameter is never exceeded. If THD is explicitly set to "Off" (fully counter-clockwise), it will stay Off, even when THD ALL adds an offset.

Example 1

The THD is set to -60 dB and THD ALL is set to +20 dB. The effective THD will be - 40 dB.

Example 2

The THD is set to -35 dB and THD ALL is set to +20 dB. The effective THD will be - 30 dB. It is limited at the upper range.

Example 3

THD is set to "Off" and THD ALL is set to +20 dB. The effective THD will still be Off.

The parameter only influences consoles of the same type, e.g. if set on bx_console Focusrite SC, it will not influence bx_console SSL 4000 G and other console plugins.