# CIQ-2 COMPIQ MINI PRO COMPRESSOR PEDAL MANUAL

Last modified: November 18, 2018

## SPECIFICATIONS

Input impedance: > 1MΩ
Output Impedance: ~100Ω
Ratio: 1:1 to inf:1
Threshold: -40dB to +10dB
Make-up gain: -20dB to +20dB
0dB input referrence level: -20dBu (77.5mV)
Output noise: -95dBV @0dBV gain
THD: 0.05% for -5dBV input signal level @ 1kHz
Output frequency response: -2dB @ 40Hz; 0dB @ 100Hz - 22KHz
Optimal Power Voltage: 9-12VDC ±10% Center Negative Barrel
DC Power Plug Barrel: Ø 5.1/2.1mm, 12-15mm long
Power Consumtion: < 25mAh
Product Size: Lenght: 39mm, Depth: 92mm, Height: 51mm
Product Weight: 163 gr.
Packed Weight: 183 gr.

## ADVICE, WARNING & CAUTIONS

**- Read this manual and keep it handy.**
- Do not exceed 12VDC (center negative) when powering this pedal.
- Use a DC Power Plug with a barrel longer than 12mm (15mm recommended).
- Do not place the pedal & batteries in direct sunlight, in extreme temperature and humidity conditions, or in dusty environment.
- Do not make modifications to the circuit and do not install the pedal in any other way except as described in this manual.
- As we struggle to improve ourselves and our products, we may change products specifications, design, and features without notice. Likewise, this manual may be changed or modified without notice so we advise you to download it from the website before using the product.

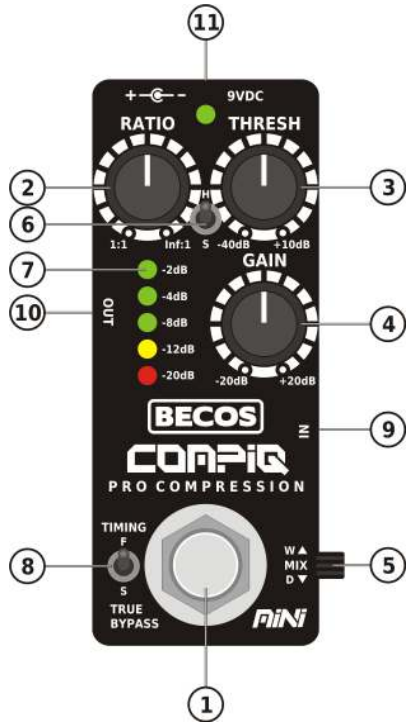
## INTRODUCTION

Thank you for chosing CompIQ MINI Pro Compressor as your audio dynamic processing tool for your instrument.

**CIQ-2 CompIQ MINI** is an all analog studio grade compressor featuring **Ratio**, **Threshold**, **Make-up Gain** manual controls, **Soft/Hard Compression Knee** selector, **Auto Adaptive Attack & Release** timings which respond to playing dynamics, and **Dry/Wet Mix** control for a perfect blend of processed and clean signal. A true **RMS-level detector** constantly measures input signal and applies accurate compression through a transparent sounding, **high performance Blackmer® VCA**. The exact amount of compression is indicated by a **5-LED display**.

**This compression circuit was designed with guitar and bass in mind, but make no mistake, it can add warmth and dynamic feeling to any audio signal, including string instruments, harmonica, brass instruments, even vocals - with an appropriate preamp.**

## EFFECT CONTROLS




1. **FOOTSWITCH -** When engaged, the switch routes the audio signal through the circuitry, and Power LED is lit Green. When pushed again, the signal is routed in **True Bypass** from Input to Output, leaving the audio untouched. This routing is still available even when pedal is not powered.

2. **RATIO** - This control sets how much the audio signal is going to be compressed, after it passes above the set threshold. It has a continuous range starting from **1:1** (for one unit of input signal level you get one unit of signal output level; which means no compression is applied) and up to **Infinite:1**. At **9'clock**, the control corresponds to **2:1 ratio** - a mild, musical and very useful compression, which delicately evens out signal level jumps. At **12'clock** it corresponds to **4:1 ratio** - usually set when more compression feel is desirable, like when playing arpegiated chords. At **3'clock** it corresponds to **10:1 ratio** - a rather aggressive compression, which may be desirable when note sustain is needed, or a country style music is played. After 20dB amount of compression, the amplitude reduction tends to behave like Inf:1 ratio, which corresponds to **Limiting effect**. When used as limiter, use Threshold control to set the level after which compressor will act like a limiter, and set Ratio above 10:1. **Keep in mind that the more compression is applied, the more make-up gain is needed, which results in a normal increase of noise.**

3. **THRESHOLD** - This control sets the signal level after which compression is applied. **Compression is only aplied to the portion of signal that goes above the threshold.** Set very low, it makes the compression kick in immediately even for small input signals. Set higher, it lets a good portion of the signal untouched. **This is a very powerful control,** because it allows the compression to affect only higher strokes of signal, while leaving the meat and bone of audio untouched. This also translates into a greater sound transparency and an increase in output level, making some make-up gain (or mixing Dry/Wet signals) totally unncecessary, which, in turn, reduces amplification noise at the output. Because of the 50dB threshold range, CompIQ can accomodate a wide range of audio signals from electric instruments. With an appropriate preamp, it may be used even with vocal or instrument microphones. When Threshold is set higher, CompIQ can be used with studio line level signal.

4. **MAKE-UP GAIN** - Because compression means lowering the output signal, some recovery gain is needed, to match output with input level. **The more compression is applied** (higher compression ratio), **the more recovery gain has to be dialed in to compensate.** Be aware of the fact that at higher compression ratios, the recovery circuit must re-amplify a very low signal and with amplification, more noise is introduced. **To overcome this, we strongly advise using Threshold, setting lower compression Ratios.** Ultimately, blend in some dry signal with the Mix control. **However, it makes no sense to over compress a signal at low thresholds just to recover its gain afterward, and increase output noise resulted from amplification.**

5. **DRY/WET MIX** - This control acts like an audio mixer, where you can blend input clean signal with the output compressed signal. This helps restore some transients or some squished frequencies which are less perceived by ear, because they are reduced to lower level, after compression. In the middle, the mix is 50-50.

Such a setting washes out a lot of compression feel, and make-up gain must be dialed in quite a bit, to preserve the dynamic processing feeling. As always, you compromise transparency for a bit of noise in compression, but that is less noticeable in a mix, because dry signal is not amplified. The dry signal alone is a perfect replication of the input signal. When set to 100% dry, CompIQ MINI acts like a buffer.

6. **SOFT/HARD COMPRESSION KNEE** - Rarely available in compression pedals, this control multiplies the compression flavors that can be achieved. The **Hard Knee** compression is evident and the ear will perceive the dynamic processing easely. Once signal gets above threshold, compression kicks in with a sharp corner, and with higher compression ratios it makes the limiting effect obvious - a desirable setting for chic'n'pickin or country playing style. With lower ratios, it provides a good and musical compression effect. The **Soft Knee** compression is more subtle and is applied progressively, with a soft corner curve. The effect is gentle and desirable when compression doesn't have to be obvious (lower ratios up to 4:1), or used as an audio effect. Think of it like a mastering tool for voicing audio content. With higher ratios (in between 4:1 and 10:1), it makes for a studio quality compression effect. Soft Knee is also more usable when threshold is set low, because it makes the compression more musical. When Soft Knee is used with higher thresholds, it adds more transparency to the sound, diluting compression feel.

7. **COMPRESSION DISPLAY** - A 5-LED display takes precise information from the RMS-level sensor and compiles a visual feedback for the amount of compression applied to input signal that goes above the threshold. **The visual indication is calibrated for -20dBu (77.5mV) input referrence signal level, suitable to a wide range of electric instrument pickups.** The display is very precise, but is also totally related to input audio signal level, which is highly dynamic by nature and may vary wildly from calibrated referrence when using different sources. Even at low to mid Ratios, if audio input level is higher, the display can peak Yellow or Red color. **Red color does not indicate anything wrong!** This may happen frequently if you have high input signal levels, lower Threshold and higher Ratio. **Use only your ear to attain the desired compression effect!**

8. **AUTO ADJUSTING DINAMIC TIMING -** Any dynamic processing requires a precise timing of the **Attack** and **Release** of the effect. CompIQ uses a responsive **Auto Adjusting Timing Circuit**, which adapts to **playing dynamics**. Short and percussive transients are handled with faster timings, while longer, steady signals, benefit from slower timings. The circuit responds dinamically to your playing and is very fast in changing these timings. Attack and Release timings are applied with softness, which makes this kind of processing very musical. **A manual set of Attack and Release would hardly match the quality of auto timing of this circuit!** On top of that, the **Timing Switch** allow you to chose from **Fast** or **Slower** attack & release times. **Slower Timings** position are approximately 10-15ms for attack time and 100-220ms for release time. **Faster** timings are approximately 5-7ms for attack, 70ms for release. Attack time means the time it takes for the maximum compression to reach the set amount. Release time means the time it takes for the compression to return to normal (input) audio level.

9. **INPUT -** Here you will connect either an instrument directly, or the output of another effect or even a microphone preamp, or a signal taken from the amplifier's SEND FX-loop.

10. **OUTPUT** - From here you will send the compressed signal to the next effect pedal, or an amplifier's input, or to the RETURN FX-loop of an amplifier. Output signal can also be recorded directly into a Hi-Z interface input. When not engaged (or powered), the pedal is in True Bypass.

11. **DC POWER CONNECTOR - Use only good filtered power supplies,** with a voltage of 9-12 VDC, with center negative polarity. **Use a DC Power Plug Ø5.1/2.1mm, with a barrel longer than 12mm (15mm recommended).**

**LAST WORD**

Compressors are usually placed right after an instrument, first in the signal chain. This is an arbitrary convention. Its placement depends on what you're trying to achieve. For instance, if a compressor is set last in the FX loop of an amplifier, it may act like a mastering tool. The combination of Ratio, Threshold, Make-up Gain and Dry/Wet Mix manual controls along with Compression Knee and Fast/Slower Dynamic Timings selectable options, makes this tiny little pedal a mighty weapon of dynamic processing. You will simply not gonna find this many features and this quality in such a pedal form factor, anywhere. You may also use it with vocals or other stringed instruments like accoustic guitars, violins, celos, or brass instruments like trumpets.

CompIQ MINI Pro Compressor is fitted with a quiet high quality FET dual op-amp. We set it in a socket, so you can easily experiment with other equivalent components. We recommend using IC's like TL072, NE5532, OPA2134, OP1642, OPA2604.

BECOS

# CIQ-2 COMPIQ MINI PRO COMPRESSOR PEDAL FOR GUITAR & BASS

**MANUAL**
**Version 1.1**
Please check and download latest manual!

COMPIQ mini
PRO COMPRESSION

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