CIQT-1 COMPIQ TWAIN DUAL-BAND / STACKED PRO COMPRESSOR PEDAL FOR BASS & GUITAR

OPERATION MANUAL

TECHNICAL SPECIFICATIONS

Input impedance: > 1MΩ
Output Impedance: ~100Ω
0dB input reference level: -20dBu (0.0775Vrms)
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 Consumption: < 49mAh
Product Size: Length: 105mm, Depth: 120mm, Height: 54mm
Product Weight: 387 gr.
Packed Weight: 455 gr.
Packed Shipping Weight (one unit): 550 gr.

INTRODUCTION & EFFECT CONTROLS

Thank you for choosing the CompIQ TWAIN Pro Compressor as dynamic processing tool for your instrument. The Twain is a state-of-the-art effect pedal designed around two independent high-performance 4320 THAT Analog Engines® which ensure very transparent and high-quality audio processing, without altering instrument's tone. The Twain can work in two modes: as a **Dual-Band compressor** with variable Crossover point, or as a fully **Stacked compressor**, where compressor engines are routed in series. The controls are laid out in a symmetrical fashion, mirrored in the middle – Lows compression controls on the left, Highs compression controls on the right.

DUAL-BAND / STACKED – A side-mounted switch sets the operation mode of the pedal. In **Dual-Band mode**, the signal passes through the variable-point Crossover and each frequency band is sent to its processing engine. In **Stacked mode**, the Crossover's re-combined signal is routed in series through each compression engine. Each operation mode renders a different tone print flavor, where Stacking compressors feels like an optical compressor, while Dual-Band processing feels more like a precise dynamics tool for the pro-user; this also behaves like a tone-enhancer.

CROSSOVER – Marked **X-OVER**, the control ranges from 70Hz to 1 KHz, with around 150Hz in the middle. The input signal always passes the Crossover, from where it is splitted for compression processing, and clean, for the Dry/Wet mixer. This ensures correct phase alignment of the input and output signals in both operation modes of the pedal. In Dual-Band mode, what is below the Crossover's set point is sent to the Lows engine and what is above is sent to the Highs engine. In Stacked mode, the Crossover is active for the Dry Line only. **NOTE – The Crossover separation point also divides the processing for different strings in the instruments.**



PREAMP INPUT TRIMMER – The input signal can be trimmed on the input stage to accommodate different processing level needs. Ranging **from -9dB of attenuation to +6dB of gain**, it can act as a compression driver or as a one-knob balancer for the overall audio effect of the pedal. **A PEAK level indicator** will start to light faintly in Yellow once the signal level passes +6dBu (1.54Vrms) and brighter, more consistent once it reaches +10dBu (2.54Vrms). The peak level indicator responds to positive gain trimmings and attenuating the signal turns the LED off. There is nothing wrong if you see this LED turned on, yet is advisable to trim down the signal if it stays lit.

RATIO - This control is available for each engine. It sets how much the audio signal is compressed after it passes above the set threshold. It has a continuous range starting from **1:1** up to **Infinite:1**. At 9'clock, the control corresponds to **2:1 ratio** - a mild, musical and useful compression, which delicately evens out signal hikes. At 12'clock it sets **4:1 ratio**. At **3'clock** it corresponds to **10:1 ratio** - a rather aggressive setting, which may be desirable only when note sustain is needed. **Inf:1 ratio** means over 20dB amount of compression is applied. This corresponds to **a Limiting effect**. **TIP – The more compression is dialed in, the more make-up gain is required, which results in additional amplification noise.**

THRESHOLD - Available for each engine, this control sets the signal level after which compression is applied. Compression is only applied to the portion of the signal that goes above the threshold. Set very low in the range, it makes compression kick in quickly, even for short amplitude input signals. Set higher in the range, it lets a good portion of the signal untouched. **TIP – With higher Threshold set, only strokes are compressed, while leaving the audio's meat and bone intact. This translates into greater sound transparency and a rise in output level, requiring less make-up gain.** With 50dB of threshold range, CompIQ Twain can accommodate a wide assortment of audio signals from many electric instruments, not only guitar or bass. CompIQ Twain can also be used with line-level signals.

TIMING SWITCH – Available for each engine, the **Auto Dynamic Timing** adjusts Attack & Release in real time, responding to **playing dynamics.** Two presets are available. **Auto Fast (F)** is 5-7ms for Attack, 70ms for Release. **Auto Slower (S)** is 10-15ms for Attack and 100-220ms for Release. Both settings respond gracefully to any playing style. **TIP – Fast timing setting accentuates the compression feel and may sometime render pops, especially with higher ratios. Slower timing setting breaths more air into compression, making it feel more natural, even with higher ratios.**

MAKE-UP GAIN – This control is available for each engine. The more compression is employed the more recovery gain has to be turned back in to compensate. In Stacked compression, these controls must be dialed in carefully because they may rapidly increase the amplification noise. **TIP – Raise the Threshold before adding Make-up Gain. Set moderate compression Ratios and additionally use Soft Knee and Slower timing, to keep noise in place.** Conclusively, you may blend in some Dry signal. **TIP – In Dual-Band mode, these independent level controls behave like a Tilt-EQ with variable pivot point set by the Crossover.**

SOFT/HARD COMPRESSION KNEE – Available for both engines. With **Hard Knee**, compression kicks in with a sharp corner making it very audible. With higher compression ratios, it makes the limiting effect very clear. With lower ratios however, it provides a good and musical compression effect. The **Soft Knee** is more subtle and compression is applied progressively once signal passes above the Threshold. The effect is gentle and desirable when compression doesn't have to be explicit or used as an audio effect. **TIP – When used with higher thresholds, Soft Knee adds more transparency to the sound, diluting compression feel. Think of it as a mastering tool for voicing audio content.**

SCF SWITCH - **Side Chain Filter** switch is only available for Lows processing engine and has three positions: **Normal (N), Low (L)** and

Deep (D). In **Normal** position, the Side Chain Filter is set to accommodate a large range of audio signals and instruments. By design, the side-chain's signal is progressively compensated from highs to lows to balance the triggering potential of different signal amplitudes at different frequencies. This setting renders a natural response that is suitable for most instances. In **Low** (L) position, an additional **-12dB@90Hz** is freed up to prevent triggering the compressor too early. This is an intermediary position, and it lets more of the low end pass through at the output, while also lowering the amount of compression. **TIP – This is a proper setting for bass or guitar, when a fuller sound is needed.** In the **Deep** (D) position, even more of the lower frequency spectrum is freed with **-12dB@200Hz**. **TIP – This setting is proper to prevent 5-stringed basses from triggering compression too early.**

DRY/WET MIX – This control acts like an audio mixer, where you can blend the clean signal with the compressed signal (a.k.a. the New York compression style). This helps restore transients or squished frequencies which are less perceived by ear when they are reduced by compression. In the middle, the mix is 50-50. **TIP – The independent Cut filters and boost Levels from Saturation circuit act like a Tilt-EQ on the Dry Line. That means you can mix more or less Dry Lows or Dry Highs over the Wet signal.**

TAPE SATURATION – Available in both engines, the **SAT** independent controls (including the auxiliary **CUT** filter and **LEVEL**) act on **Dry Line** only and emulate vintage studio tape saturation compression effect of the '60s. This is a musical sort of distortion happening when high amplitude audio signals are recorded on magnetic tape. **With independent controls you can introduce different levels of saturation on each band, as separated by the Crossover.** The intent of this analog circuit is to saturate the **Dry Line** and then mix it with the **Compressed Line,** to fatten up the compressed sound with harmonic distortions, which may complement guitar and bass sound. The **Lows Saturation** is more applied to note's higher harmonics and less to the fundamentals, to prevent chocking or fuzziness with bass instruments. **For a more prominent effect on the Lows, the Crossover must be set higher in the range, around 3'clock or above.** The **Highs Saturation** effect is more audible, and is actually better suited for a musical response. Saturation controls act from clean (fully counterclockwise) up to a mild overdrive (fully clockwise). **TIP – Increase the overall Dry Line Saturation, subtly mix it with the Wet Line and then add a splash of chorus effect at the output; enjoy!** On each band of the Dry Line there are **Low & High CUT** filters and **Low & High LEVEL** controls, to aid in balancing the Saturation effect. The CUT filters are passive first-order filters (-6dB), with a very gentle contribution. The boost LEVELS are active (+9dB), again, with a gentle slope. With saturation increased on each band, a drop in volume will happen for the Dry Line. Use **Level** controls on each band to compensate. **TIP – Leaving out the Saturation with knobs fully counterclockwise on both bands, the CUT filters and LEVEL boosts of each band act like a Tilt-EQ on the Dry Line, meaning you can mix more or less Dry Lows or Dry Highs with the Wet Line!** This is a very powerful feature which can selectively restore the energy and clarity of the original signal, by blending in only what is missing as a result of compression. With balanced levels, a flat Dry signal can be mixed over the Wet Line as well. **TIP - The CUT filter on the Dry Lows can help tightening the bass by attenuating the boomines in the sound. This filter is more effective when the Crossover is set towards 3'clock at around 500Hz, or above.** By its nature, each of the Crossover's bands is also filtered at the intersecting (and overlapping) point, and that also affects saturation, so the Crossover and Saturation controls are very interactive. **NOTE – Saturation effect may feel different on each string on the instrument and is largely dependant on how the Crossover is set. Highs saturate more musically than Lows. Guitar signal responds better to saturation than bass.**

COMPRESSION DISPLAY – Available on each band, the **5-LED Gain Reduction display** takes accurate information from the Lows & Highs RMS-level sensors and compiles visual feedback over compression. Separate displays help visualize the compression effect very precisely, especially in the Dual-Band mode, where different compression can be applied to notes on different strings on the instrument. The displays are calibrated for -20dBu (77.5mVrms) reference input level and their response is dynamic by nature. Even at low to mid ratios and with higher input levels or lower thresholds, they can peak Yellow or Red color quite often. **That doesn't mean anything is wrong. Use only your ear to achieve your desired compression effect!**

FOOTSWITCH - When engaged, the audio signal is routed through the active circuitry and the power LED marked **COMP** is lit Green. When pushed again, the signal is routed **True Bypass** from Input to Output, leaving the audio intact, even when the pedal is not powered.

INPUT & OUTPUT – On the input TS connector you may connect either an instrument directly, or the output of another pedal, or a signal taken from the amplifier's SEND FX-loop. The Output TS connector sends the processed signal to the next effect pedal, or to an amplifier's input, or to the RETURN FX-loop of an amplifier. The output signal can also be recorded directly into a Hi-Z interface input.

DC POWER CONNECTOR - Use only good filtered power supplies, with a voltage of 9-12 VDC, center negative. **Use a DC Power Plug Ø5.1/2.1mm, with a barrel longer than 12mm (because the connector is recessed inside the enclosure).**

BECOS

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TRUE BYPASS

COMPIQ TWAIN

PRO COMPRESSION

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