

C400XL

DUAL STEREO GATE & COMPRESSOR




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 power-supply 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.
- 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.

IMPORTANT SAFETY INSTRUCTIONS

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 the 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 following products:

C400XL

DUAL STEREO GATE & COMPRESSOR

- 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

TABLE OF CONTENTS

INTRODUCTION

<i>Important safety instructions</i>	a
<i>Certificate of Conformity</i>	b
<i>Table of contents</i>	3
<i>Introduction</i>	5
<i>Front Panel overview</i>	6
<i>Rear Panel connections</i>	8
<i>Signal Flow diagram</i>	9
<i>Typical setups</i>	10
<i>Cables - (important)</i>	12

BASIC OPERATION

<i>Preset applications</i>	14
C400XL Processing	
<i>Compression basics</i>	16
<i>Comp/Limiter mode - C400XL</i>	17
<i>Gate Expander mode - C400XL</i>	18
<i>New Style Compression - C400XL</i>	19

APPENDIX

<i>Software update</i>	20
<i>Technical specifications</i>	21

QUICK START - IF YOU JUST CAN'T WAIT

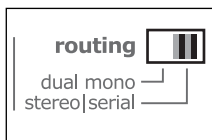
If you are familiar with compressors, limiters, gates and de-essing techniques this quick guide is probably all the information you will need to operate the C400XL. For more information, please refer to other sections of this manual.

- Unpack the C400XL and check for possible damages that could have been caused by transport.
- Read the safety instructions.
- Take a few minutes to register online via: www.tcelectronic.com or send in the registration card. Customers registered online will be notified directly via E-Mail about relevant news

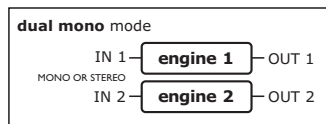
The C400XL is a compressor/de-esser - gate/expander with two independent channels that can be routed either in serial (stereo) or dual mono mode.

Routing

The C400XL has two routing options. Dual Mono or Stereo/Serial. The Routing mode is set on the C400XL front panel on the far left.

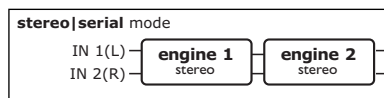


Dual mono



- where C400XL is split and operates as two 100% separate mono engines. A typical application for this mode is using the two engines as insert effects on two different channels.

Stereo/Serial Mode



- utilizing both effect engines in serial. Engine 1 is feeding Engine 2. This is the mode to

choose if you wish to process a signal with both processing engines. Note that this routing works for both a stereo setup but also a single mono setup. Typically you would use one engine as a gate/expander and the other as de-esser or compressor/limiter. But note that any combination of effects is possible as the engines operate independently.

- Make all appropriate connections. You may refer to the examples on pages 10-11.
- Decide application and set Routing accordingly.
- Set MIX to 100% for normal compression. Any setting between 0 and 100% utilizes the C400XL "new compression style", based on parallel compression. Read the section "New Style Compression"
- Select desired processing type on the two Engines.
- Start playing.
- Feed the C400XL channels with an appropriate level. The yellow -3 LED should only be lit at peaks. The level is set on the sending device.
- Set MIX depending on your intentions and selected effect.
- Now tweak the THRESHOLD, MAKE-UP GAIN and RATIO controls for the two engines until you have the intended result.

For any questions left unanswered by this manual feel free to visit our online support center; **TC Support Interactive**, which can be accessed via: www.tcelectronic.com



Latest manual revision can always be downloaded from www.tcelectronic.com Manual revision number is found in the bottom of page 3.

INTRODUCTION

Congratulations on the purchase of your C400XL.

C400XL is a supreme Dual Gate | Compressor specially designed for audio professionals on the road as well as in the studio. Combining award-winning multiband compression technology with an extremely fast and intuitive user interface as well as a super silent click free gate, the C400XL is made for the uncompromising sound engineer.

Multiband dynamics technology

C400XL uses advanced TC Electronic multiband dynamics technology to compress and adapt to any source - from vocals and percussion to guitars and even keyboards. The inherent transparency of the multiband compressor brings out the qualities of the source material, yet secures a firm and consistent level at all times. The optimized and super-fast gate offers a click free and high precision gating of any source.

Three strikes and you're in

C400XL stands out in three distinct areas that make it the ideal unit for demanding live and studio use. First there is the sound quality – this quality is ensured by source-based multiband compression and ultra fast gating. Another great aspect of the C400XL is its versatility – adapt to any source, analog or digital, decide on gate, compression or a combination, and C400XL is up for the task at hand. And finally there is the intuitive, fast use of C400XL – source-based compression, intuitive user interface and a mix knob for parallel compression makes for a fast, professional unit.

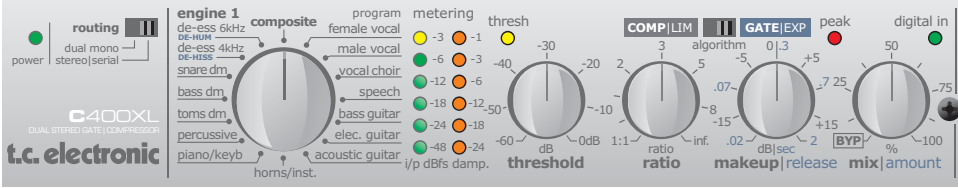
Intuitive – yet advanced

C400XL features a TC Electronic exclusive 'Mix' knob allowing parallel compression without complicated routing schemes. The unique Parallel compression will lift hidden details in every vocal or drumkit track. To assure smooth operation, C400XL is equipped with high resolution input, gain reduction metering and threshold LED indication. Choose between true dual mono for superior channel separation, stereo or serial operation. C400XL features brickwall limiting for peak stop and hot levels prevention.

Analog and digital connectors

C400XL is the ideal choice for parallel compression, gating and/or compressor applications. A C400XL channel transforms from multiband compressor to ultra fast gate and back at a flick of a switch. Gate and compressor functions can be serial or parallel at the choice of the engineer, thus allowing e.g. awesome combinations of compressor and gate on a snare drum giving that tight and snappy impact sound. Balanced Analog (XLR) and Digital AES/EBU (XLR) connectors make C400XL the perfect solution for any pro sound engineer looking for high-end compression/gates to complement his analog or digital setup.

FRONT PANEL OVERVIEW



ROUTING MODE switch

Selects between the following routing modes:

Dual Mono routing mode

The two engines operate 100% individually and can be perceived as two separate mono units.

Stereo/Serial routing mode

This mode can be used for several different application setups:

Serial mono:

By using only the Left input/Left output, C400XL operates as two mono blocks in serial.

Serial Stereo:

Connecting a stereo signal on Left/Right inputs the two engines can be used as two stereo devices in serial.

Stereo:

Engine 2 is bypassed by setting MIX to "bypass" (fully counter-clockwise) and Engine 1 is used as a stereo effect. Only one engine is applied.

The following descriptions of controls are valid for both Engines 1 and 2.

PRESET selector

Use the PRESET selector to select the desired source preset for Engine 1.

METERS

I/P dB:

Input meter showing the signal present on the input. Analog or digital. Meters indicate dBFS.

Damp meter:

Indicates the attenuation of the signal in dB.

THRESH LED (Threshold LED)

In presets using Multi-band compression:

The LED can indicate two scenarios.

- When the input signal level exceeds the set threshold.
- When the input signal triggers the Peak Limiter.

In presets using Gate/Expander mode:

LED on = signal above threshold

LED off = signal below threshold

PEAK

The PEAK LED can indicate various types of overload.

LED will be on if:

- The incoming digital or analog signal is too hot. Reduce the source signal.
- Internal overload in the digital domain. This situation occurs if the applied make up gain is set too high. This situation should not occur under normal working conditions.

THRESHOLD

Sets the threshold for the selected preset. The threshold should be set according to the level of the processed signal. The lower the threshold is set, the earlier the processing is applied.

RATIO

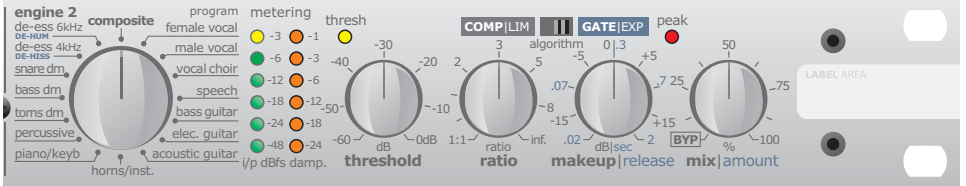
Sets the ratio for the selected engine preset.

MAKEUP / RELEASE

For compression presets this control sets the make-up gain. The release times are predefined in the presets.

For Gate/Expander presets this control sets the release time.

FRONT PANEL



MIX / AMOUNT

For compression effects the MIX/AMOUNT knob controls the mix between the processed and the direct signal. When set to 0% the engine is 100% bypassed.

In Gate /Expander mode the knob controls the amount of damping.

REAR PANEL CONNECTIONS



**Balanced
XLR
Analog
Inputs**

**XLR
Analog
Outputs
(pseudo
balanced)**

**Digital
In/Out**

**MIDI
In/Out**

**Power Input
100 - 240VAC**

Inputs

Balanced analog inputs on XLR connectors.

Outputs

Pseudo balanced analog outputs on XLR connectors.



Please read the manual section on correct cables to use with C400XL on pages 12-13.

Digital I/O

24 bit digital AES/EBU input and output on standard XLR connectors.

C400XL automatically detects if a digital signal is present on the AES/EBU input. When locked to a valid digital signal the DIGITAL IN LED on the front panel is lit.

If C400XL cannot lock to the digital input the analog inputs are used.

MIDI In - MIDI Out

MIDI in/out for uploading software.

Power

100-240 VAC switchmode power supply. The C400XL accepts any voltage from 100 to 240 VAC.

SIGNAL FLOW

