PHONIC
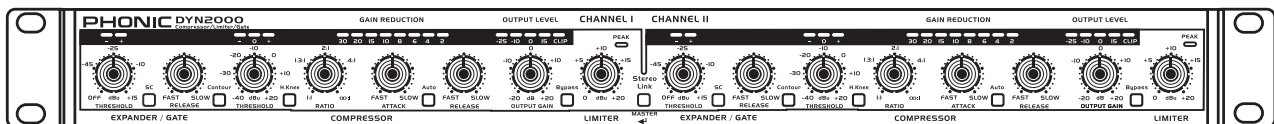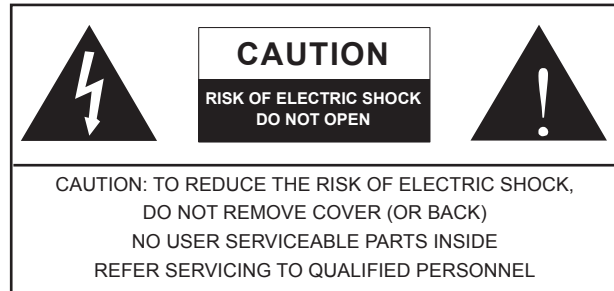
DYN2000
DYNAMIC PROCESSOR

IMPORTANT SAFETY INSTRUCTIONS

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus. The MAINS plug is used as the disconnect device, the disconnect device shall remain readily operable.

Warning: the user shall not place this apparatus in the confined area during the operation so that the mains switch can be easily accessible.

1. Read these instructions before operating this apparatus.

2. Keep these instructions for future reference.

3. Heed all warnings to ensure safe operation.

4. Follow all instructions provided in this document.

5. Do not use this apparatus near water or in locations where condensation may occur.

6. Clean only with dry cloth. Do not use aerosol or liquid cleaners. Unplug this apparatus before cleaning.

7. Do not block any of the 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 is 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 plug, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Use only with a 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 lighting 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.

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

The lightning flash with 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 appliance.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

CAUTION: Use of controls or adjustments or performance of procedures other than those specified may result in hazardous radiation exposure.

DYN2000
Dynamic Processor

USER'S MANUAL

TABLE OF CONTENTS
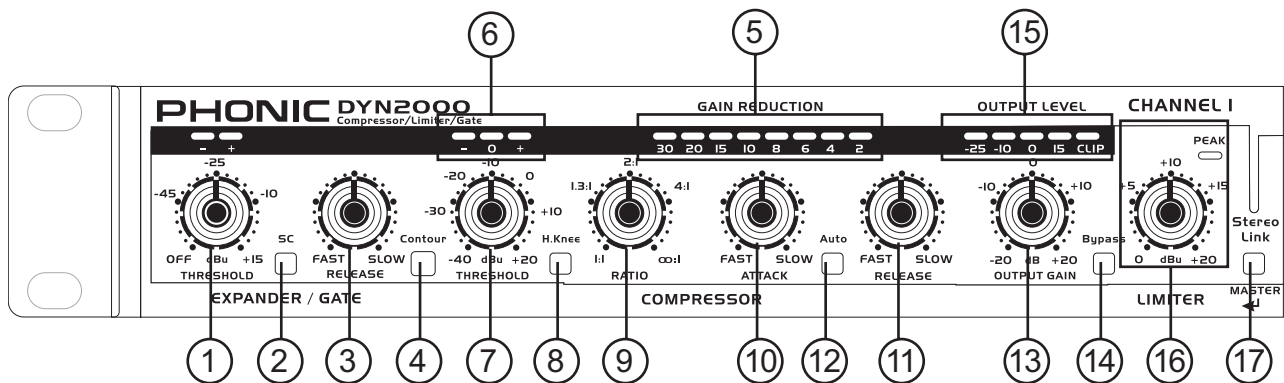
PHONIC

INTRODUCTION

Congratulations on choosing another quality product from Phonic. The DYN2000 Dynamic Processor with Compressor, Limiter and Gate functions is the ideal product for sorting out any excess noise, keeping those high peaks under control and smoothing out any vocal or instrumental sounds in your audio. We strongly suggest that you read this user's manual thoroughly to allow yourself to make full use of this product. After reading, store the manual in an easy to remember location. This will enable you to find it quickly in case there is something you missed the first time around.

FEATURES

- Stereo or Dual Mono operation of gate, compressor and limiter functions

- Select between soft knee and hard knee operation

- Expander/Gate function features variable release time and +15dBu max. threshold

- Separate sidechain inserts with selectable Low Frequency Shelf

- The limiter function provides total control of maximum peak levels at the output regardless of any other control

- System bypass buttons on both channels, useful for comparing processed and unprocessed signals

- 8-Segment LED display, showing gain reduction up to 30dB

- Balanced XLR and 1/4" TRS inputs and outputs

QUICK SETUP

1. Make sure your unit is off. Preferably remove the AC power cable.

2. Connect all of your required output devices to the DYN2000's inputs. If it's a stereo device, use both of the unit's channels and push the Stereo Link button in. If you're using a mono signal, simply use a single channel. The other channel will then be free for a second mono signal.

3. Connect all of your required input devices to the DYN2000's output connectors. This may include amplifiers or mixers (if you're using the DYN2000 on a mixer's insert point).

4. Connect any additional signal processors you wish to make use of to the unit's Sidechain insert points. This will require a y-cord with a 1/4" TRS jack on one end and two 1/4" TS jacks on the other.

5. Turn your devices on in this order: instruments, mixer, signal processors, amps/speakers.

FRONT PANEL DESCRIPTION

Expander/Gate Section

A noise gate is a signal processor that turns off or significantly attenuates the audio signal passing through it when the signal level falls below a user adjustable threshold.

1. Expander/Gate Threshold Control and LEDs

This control adjusts the threshold of the gate, basically determining how much of the input signal will pass through to the output. When the threshold control is in the OFF position, all signals are allowed through the gate. Turning it all the way clockwise will ensure only signals over the +15 dB are allowed to pass through, affectively limiting the noise level. The two LEDs indicated when input signals are above (green LED) or below (red LED) the selected threshold.

One way to easily and effectively set the gate threshold is to first turn this control to the OFF position. Play your audio through the DYN2000 and turn the threshold control up until the red Gate LED comes on. This is helpful in removing hiss from tape, guitar amps, and so forth.
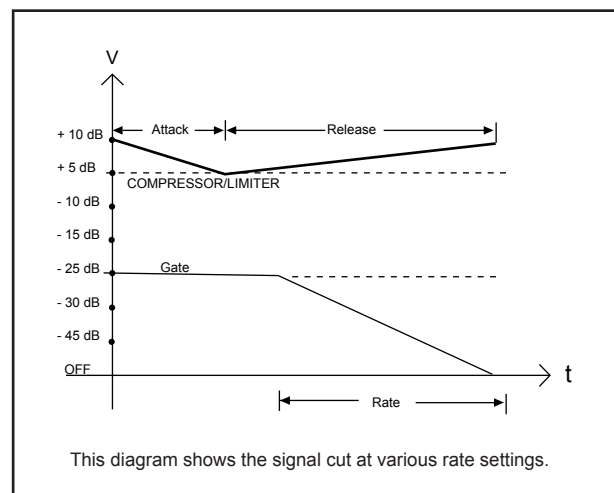
NB. The DYN2000's expansion ratio is internally fixed to approximately 10:1, helping to eliminate residual noise often associated with gating.

2. Sidechain Enable Button

This switch enables the sidechain, allowing users to use the 1/4" TRS sidechain connector on the rear of the DYN2000 to send their signal to external processors and receive the processed signal back. If there is nothing connected to the sidechain loop, this button has no affect.

3. Expander/Gate Release Control

This control sets the speed at which the gate closes once the input or sidechain signals fall below the selected threshold. Set this control to a slower setting if vocals or acoustical instruments are used; set to fast for tighter percussion.

This diagram shows the signal cut at various rate settings.
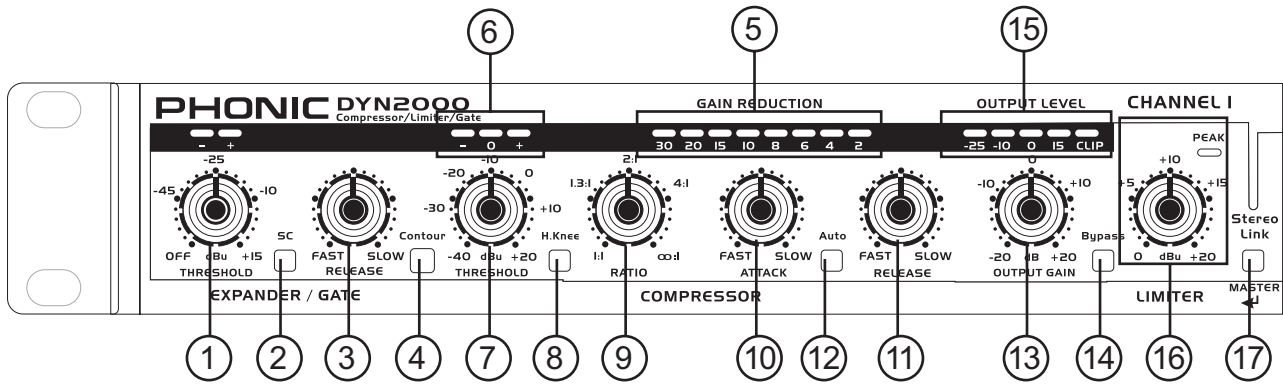
4. Contour Button

Push this button in to ensure the DYN2000 is less sensitive to low frequency energy, ensuring there's no loss of audio – particularly helpful when using mixed program material.

Compressor Section

Compressors are signal processors that reduce signals over a user-defined threshold by a user-defined amount/ratio.

5. Gain Reduction Meter

This meter gives users a visual ideal of how much the signal is being attenuated by the compressor and gate functions.

6. Compressor Threshold Indicators

These three LEDs indicate the relationship of the input signal level to the threshold of compression. The green BELOW LED is On when the signal is below threshold and the red ABOVE LED is On when the signal is above threshold.
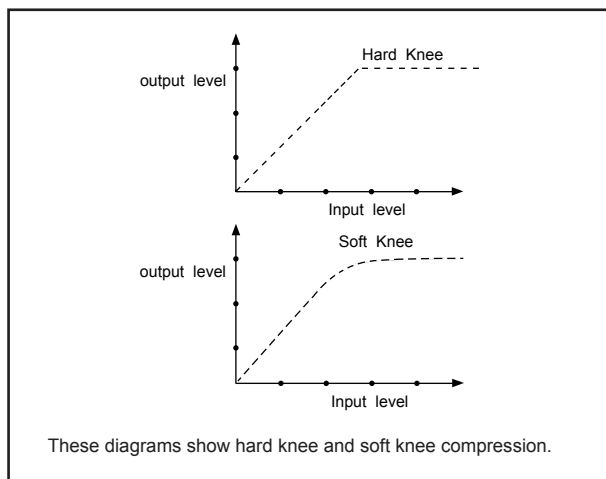
Note: Even when no input signal is received, these LEDs may flicker when the power is activated or deactivated.

7. Compressor Threshold Control

This control allows users to adjust the level at which compression to the input signal will kick in, thus avoiding distortion and protecting your amplifier and speakers. Turning it clockwise will raise the threshold, thus squeezing signals at a higher level and reducing the amount of compression applied to the signal.
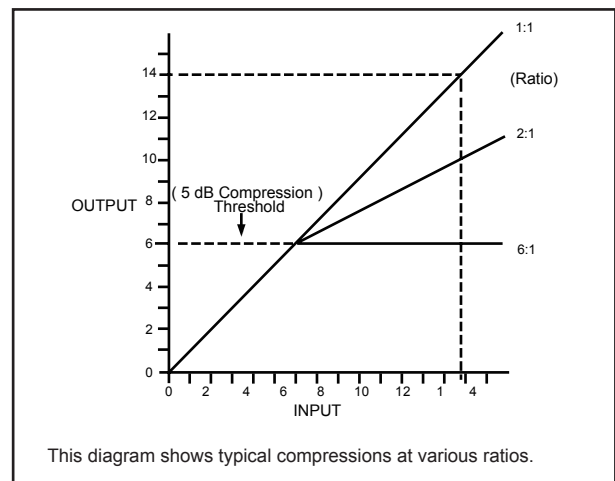
8. Hard Knee Button

With this button pushed in, the DYN2000 applies a hard-knee style of compression to the input signal. What this means, exactly, is that when the signal level reaches the selected threshold, the compressor will kick-in instantly and start compressing the signal at the selected threshold. When released, however, a soft-knee style of compression is used, basically easing into the compression just prior to hitting the threshold.

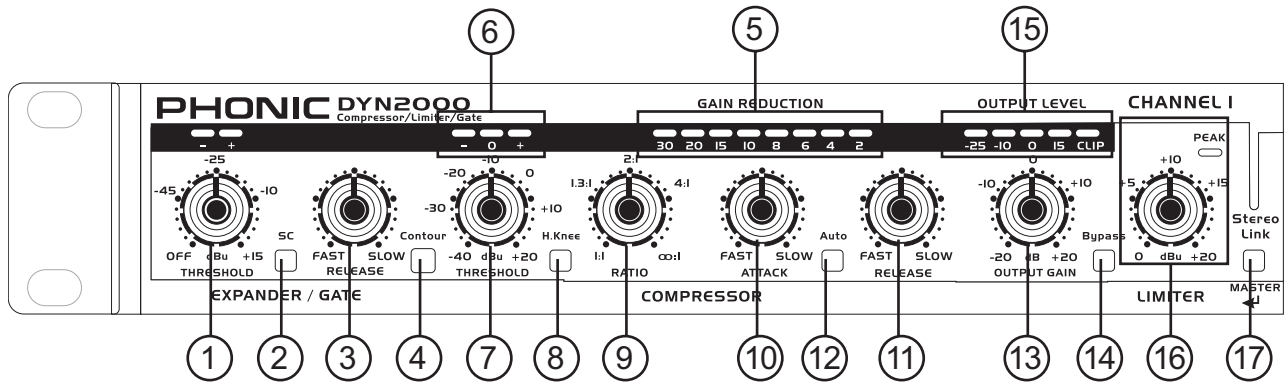These diagrams show hard knee and soft knee compression.

9. Ratio Control

This allows users to adjust the ratio between the input signal received by the DYN2000 and the compressed output signal. When this rotary VR is set to 1:1, there will be no compression applied to the signal. When it is set at 2:1, any input signal over the selected threshold is compressed to half. When it is set to ∞:1, any signal over the threshold setting will be completely removed (affectively making the compressor a 'limiter').

This diagram shows typical compressions at various ratios.
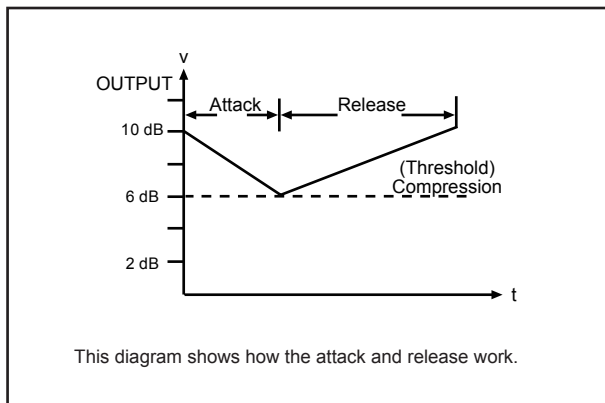
10. Compressor Attack Control

This control allows users to adjust the speed at which the compressor function will take effect after a signal above the selected threshold has been detected. A fast attack time will be more noticeable, but will control excessive peaks much easier. A slower attack time, however, will be far less audible and still successfully compress excessive signals.

11. Compressor Release Control

The release determines how fast the compression circuitry will return the input to its original level after levels have fallen below the selected threshold. A fast release time will rigidly follow the program material, whereas a slower released time will allow for much smoother compression.

This diagram shows how the attack and release work.

12. Auto Attack and Release Switch

Pushing this switch in will allow the DYN2000 to automatically determine the best attack and release times based on the program material put before it. When activated, it will affectively render the attack and release controls useless.

Master Section

13. Output Gain Control

This control adjusts the amount of gain applied to the signal at the output stage (meaning the compression and gate thresholds are not affected).

14. Bypass Button

The DYN2000 include a hard-wired bypass circuit, which is active even while the power to the unit is off. While using the unit, however, the bypass is useful in comparing processed and unprocessed signals.
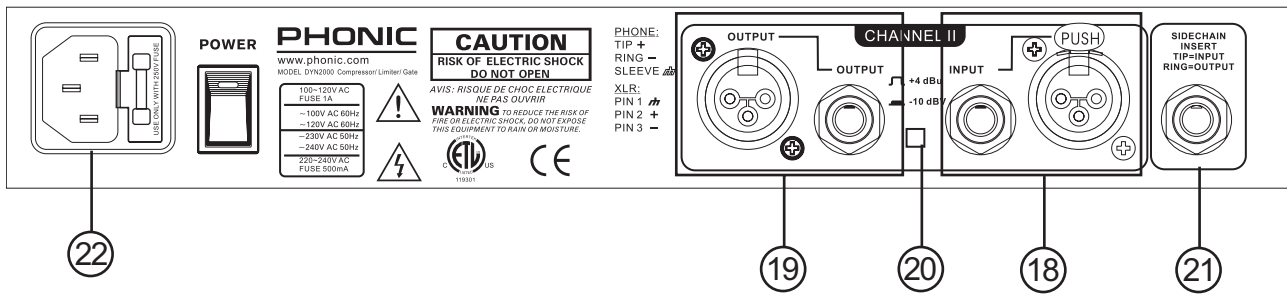
15. Output Level Meter

This 5 segment level meter gives users a visual indication of when the output signal reaches certain levels. To make the most of your audio, set the output gain control to a level that will ensure the level meter's clip LED lights up only occasionally.

16. Limiter Control and Peak LED

Adjusting this control will allow users to apply a limiter to their already compressed signal, affectively protecting speakers against large transient sounds, as well as other excessive peaks and overloads. Users are able to adjust the limiter between 0 and +20 dB, with +20 dB being the setting where the least amount of limiting occurs. The Peak LED will light up whenever a signal reaches the level set by the limiter control and is attenuated.

17. Stereo Couple Button

Pushing this button in switches the DYN2000 between stereo and dual mono modes. In stereo mode, channel 1 acts as the master control and all compression and gating is applied to both channel 1 and 2 inputs. In dual mono, both channels work independent of one another.

REAR PANEL DESCRIPTION

18. Channel 1 and 2 Inputs
These balanced XLR and 1/4" TRS phone jack connectors are for the input of signals to the DYN2000. Please note that only one of these inputs should be used on each channel at any one time.

19. Channel 1 and 2 Outputs
These balanced XLR and 1/4" TRS phone jack connectors are for the output of already processed signals from the DYN2000. Unlike the input jacks, all of these outputs can be used simultaneously.

20. Operating Level Select Switch
This switch swaps the input and output levels of the corresponding channel between -10 dBV (consumer level) and +4 dBu (professional level).

21. Sidechain Insert Points
This 1/4" TRS connector allows users to send and receive signals to and from external processors using a special y-cord (see diagram). This allows users to apply additional effects to their signals. Pushing the sidechain button (see point number 2) on one or both channels will make use of the unit connected to the corresponding sidechain insert.
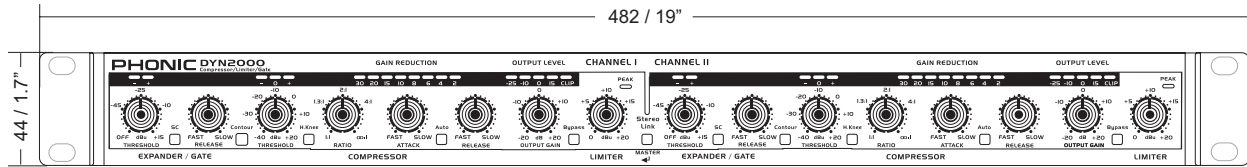
22. AC Power Cable Receptacle and Power Switch
This is a standard AC receptacle that accepts IEC-type power cords. We suggest using the cord provided along with this unit only, and be sure to check local voltage levels before connecting the cord. The accompanying power switch will turn the DYN2000 on and off when power is supplied to the unit.
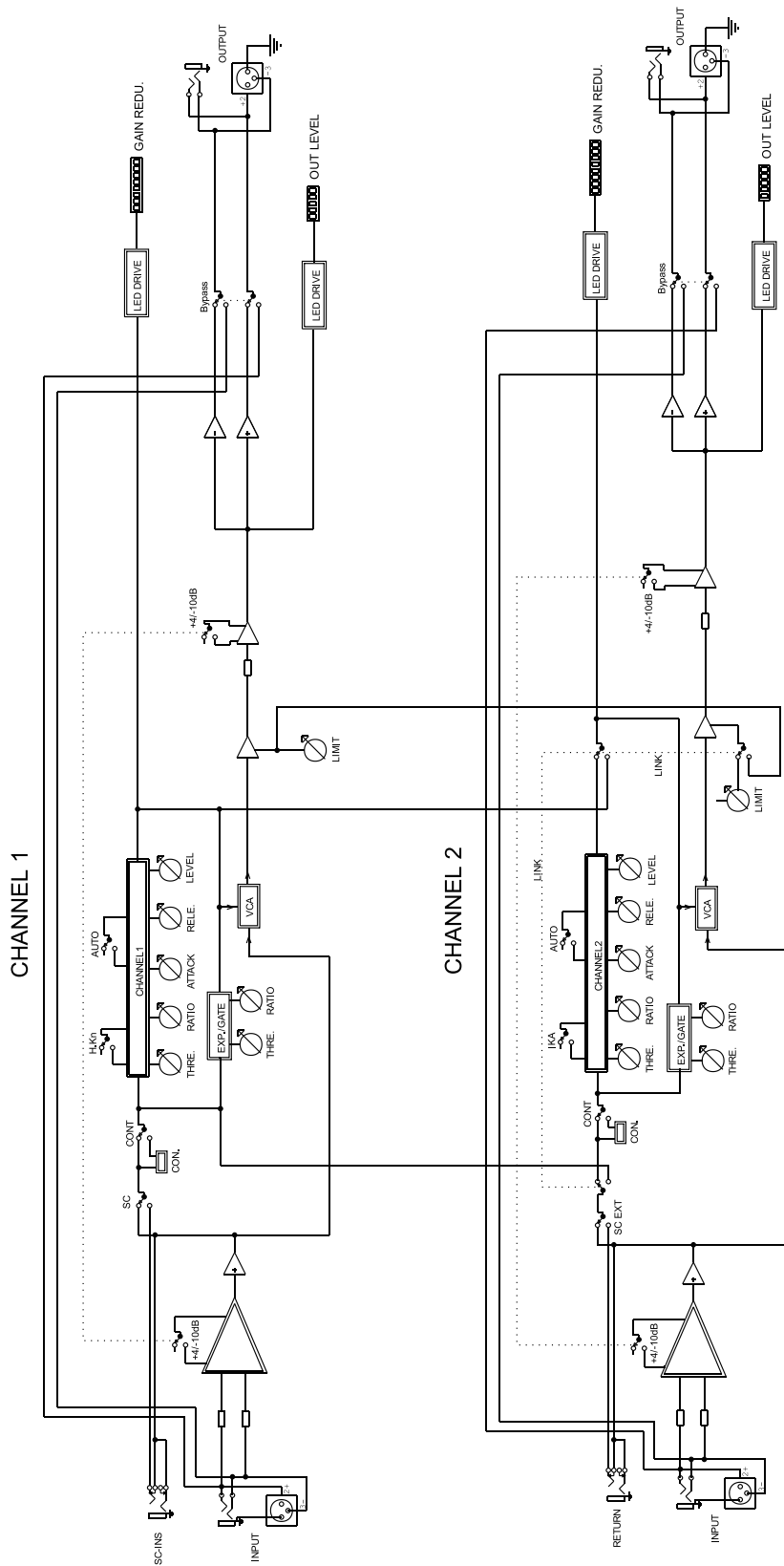
SPECIFICATIONS

INPUT	
Connector:	1/4" TRS and XLR, Floating Balanced; XLR: Pin 2 hot Phone: Tip Hot HI
Impedance:	>50kΩ balanced, >25kΩ unbalanced
Maximum Level:	+24dBu, Balanced or Unbalanced
CMRR:	>40dB at 1kHz, typically >55dB
SIDECHAIN INSERT	
Connector:	1/4" TRS Phone, Normalled: Ring = Output (send); tip = Input (return)
Impedance:	Tip = >10kΩ (Input), Ring = 2kΩ (Output)
Maximum Level:	+24dBu
OUTPUT	
Connector:	1/4" TRS phone and XLR floating balanced, XLR: Pin 2 and Tip Hi
Impedance:	120Ω balanced, 60Ω unbalanced
Maximum Level:	+21dBu,>+20 dBm into 600Ω, balanced or unbalanced
Frequency Response:	20Hz - 20kHz; +0, -0.5dB,Typical 3dB points are 0.35Hz and 110kHz, unity gain
Noise:	<-90dBu, 22Hz to 22kHz, no weighting, unity gain
THD + N:	Typically <0.04%; Any Amount of Compression Up to 40dB@1kHz
SMPTE IMD	Typically <0.08% @ +10dBu (15dB Gain reduction)
COMPRESSION	
Threshold Range:	-40dBu to +20dBu
Threshold Characteristic:	Selectable easy or hard knee
Compression Ratio:	Variable; 1:1 to Infinity:1; 60dB Maximum Compression
Attack Time:	Variable program-dependent; 3ms to 340ms for 15dB gain reduction
Release Time:	Variable program-dependent; 200dB/Sec to 3dB/Sec
EXPANDER/GATE	
Threshold Range:	OFF to +15dBu
Expansion Ratio:	10:1
Maximum Depth:	>60dB
Attack Time:	<500µs (from Maximum Depth)
Release Time:	Adjustable, 30ms to 3sec (to 30dB attenuation)
SYSTEM	
Limiter Threshold Range:	0dBu to +20dBu
Gain Adjustment Range:	Variable; -20dB to +20dB
Interchannel Crosstalk	<-80dB, 20Hz to 20kHz
Dynamic Range:	>115 dB
POWER	
Power Consumption:	15 Watts Maximum
Operating Temperature:	0°C to 45°C (32°F to 113°F)
PHYSICAL	
Dimensions:	1.7" x 19" x 7.2" (4.4 cm x 48.2 cm x 18.3 cm)
Weight:	Net weight: 5.05 lb (2.29 kg) Shipping weight: 7.20 lb (3.27 kg)
Note: 0dBu = 0.775Vrms	
Note: Specifications subject to change without notice.	

PHONIC

DIMENSIONS

482 / 19"

44 / 1.7"

183 / 7.2"

* All measurements are shown in mm/inches.

BLOCK DIAGRAM

TO PURCHASE ADDITIONAL PHONIC GEAR AND ACCESSORIES

To purchase Phonic gear and optional accessories, contact any authorized Phonic distributor. For a list of Phonic distributors please visit our website at www.phonic.com and click on Get Gear. You may also contact Phonic directly and we will assist you in locating a distributor near you.

SERVICE AND REPAIR

Phonic has over 100 service centers worldwide. For replacement parts, service and repairs please contact the Phonic distributor in your country. Phonic does not release service manuals to consumers, and advice users to not attempt any self repairs, as doing so voids all warranties. You can locate a dealer near you at www.phonic.com.

WARRANTY INFORMATION

Phonic stands behind every product we make with a no-hassles warranty. Warranty coverage may be extended, depending on your region. Phonic Corporation warrants this product for a minimum of one year from the original date of purchase against defects in material and workmanship under use as instructed by the user's manual. Phonic, at its option, shall repair or replace the defective unit covered by this warranty. Please retain the dated sales receipt as evidence of the date of purchase. You will need it for any warranty service. No returns or repairs will be accepted without a proper RMA number (return merchandise authorization). In order to keep this warranty in effect, the product must have been handled and used as prescribed in the instructions accompanying this warranty. Any tempering of the product or attempts of self repair voids all warranty. This warranty does not cover any damage due to accident, misuse, abuse, or negligence. This warranty is valid only if the product was purchased new from an authorized Phonic dealer/distributor. For complete warranty policy information, please visit http://www.phonic.com.

CUSTOMER SERVICE AND TECHNICAL SUPPORT

We encourage you to visit our online help at http://www.phonic.com/help/. There you can find answers to frequently asked questions, tech tips, driver downloads, returns instruction and other helpful information. We make every effort to answer your questions within one business day.

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