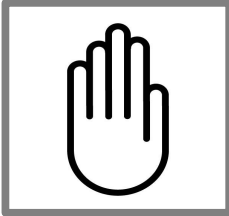# OWNER'S MANUAL

GECKO® ETERNITY CMP 2408

www.geckomusicgroup.com

GECKO®

SAFETY INSTRUCTIONS & SYMBOLS GUIDE

For your own safety and to avoid invalidation of the warranty, all text marked with these symbols should be read carefully.

SYMBOLS:

NOTES
Contain important information and useful tips on the operation of your equipment.

WARNING
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.

CAUTIONS
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. Please read the manual carefully.

HEADPHONES SAFETY WARNING
Contain important information and useful tips for headphones outputs and monitoring levels.

SAFETY INSTRUCTIONS:
- To reduce the risk of electrical shock, do not remove covers. No user-serviceable parts inside. Please refer servicing to qualified personnel.
- To reduce the risk of electrical shock or fire, do not expose the equipment to rain or moisture.
- Do not impose unnecessary stress on your equipment (i.e. placing heavy objects on it, over screwing its mounting, etc).
- Read and keep the instruction manuals in a safe place for future references.
- Do not attempt to clean the equipment with chemical solvents as this may damage the finish. Clean only with a dry cloth.
- Do not block any ventilation openings.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- Do not defeat the 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 grounding prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for the replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Unplug the apparatus during lightning storms or when it is not in use for a long period of time.

- Use only attachments/accessories specified by the manufacturer.
- Always shut down power supply when not in use to save energy and for a prolonged lifespan.
- Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a period of time. The U.S. Government's Occupational Safety and Health Administration (OSHA) and the Singapore Workplace Safety and Health Council (WSHC) has specified the permissible noise level exposures shown in the following chart. According to OSHA and WSHC, any exposure in excess of these permissible limits could result in some hearing loss. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels use hearing protectors while the equipment is in operation. Earplugs or protectors in the ear canals or over the ears must be worn when operating the equipment in order to prevent permanent hearing loss if exposure is in excess of the limits set forth here:

Duration/Day (Hours)	dB, Sound Pressure Level (SPL)	Descriptions
	Below 90dB	Safe zone
8.00	90	Hearing damage
6.00	92	
4.00	95	
3.00	97	
2.00	100	Serious hearing damage
1.50	102	
1.00	105	
0.50	110	
0.25 or less	115	Human pain threshold

FOREWORD

Dear Friends,

Thank you very much for purchasing quality products by **GECKO MUSIC GROUP**. I am very grateful that we have journeyed this far, since 2002! We have set new audio standards in the industry and we have touched and changed lives along the way! I believe our journey will not stop but continue to pursue more breakthrough findings and improvements that will change our lives for the better.

At **GECKO MUSIC GROUP** we focus on developing nothing but the best professional audio equipment and premium grade audiophile products you ever need! Our engineering team is constantly doing R&D to meet this goal. I thank God that by His grace, we have succeeded in developing the revolutionary C.R.I.S.T.A.L.® technology that has changed and is changing the way how audio is captured, encoded, reproduced and managed!

On behalf of **GECKO MUSIC GROUP**, I would like to pledge our continuing commitment to uphold our traditions in serving the music and audio communities around the world with more value-added premium quality GECKO® professional audio equipment and premium grade audiophile products!

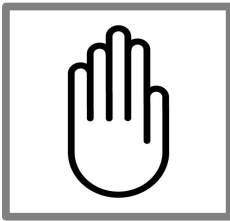Once again, thank you very much for your support. We trust you will love what you hear!

Yours truly,

Daniel Foo
Founder/Director (R&D)
GECKO MUSIC GROUP

TABLE OF CONTENTS

NOTES: Congratulations on purchasing the GECKO® ETERNITY CMP 2408 compressor/gate! We recommend that you take a moment and read through the manual as it provides information that will assist you in using your unit to its fullest potential.

INTRODUCTION

Not all compressors made the same! The GECKO® ETERNITY CMP 2408 comes with two separate and highly flexible compressors and expander/gate in a single rack space unit, with a range of control and even an "Auto" mode for automatic "Attack" and "Release" time settings.

The GECKO® ETERNITY CMP 2408 features the revolutionary C.R.I.S.T.A.L.® Audiophile PreAmps at its gain structures for that super clean and natural level compensation. The GECKO® ETERNITY CMP 2408 offers loads of other user-friendly dynamic processing operations to smooth uneven levels, add sustain to vocals and musical instruments, fatten up or tighten up mixes and mastering.

The GECKO® ETERNITY CMP 2408 is a "must-have" for singers, musicians, and audio engineers.
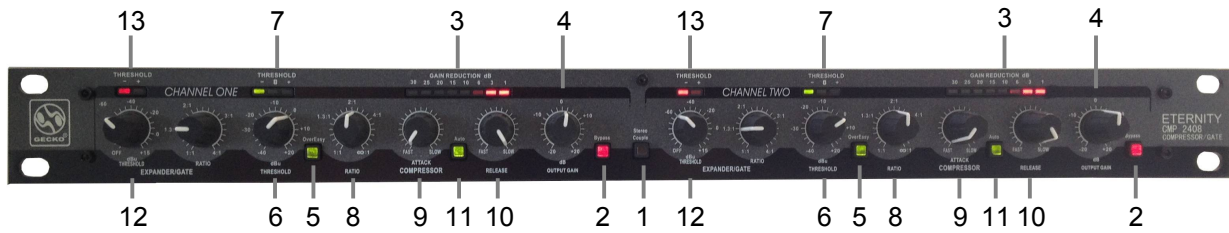
Here are some examples of common compressor and gating applications:

COMMON COMPRESSOR APPLICATIONS	COMMON GATING APPLICATIONS
Fattening a kick drum or snare drum	Gating percussive sounds (i.e. kick drum, snare drum, timpani)
Adding sustain to instrument sound	Gating sounds that have longer decay (i.e. cymbal, piano)
Smoothing out a vocal performance	Gating hum/buzz from live instruments or recorded tracks
Raising a signal out of a mix	Downward expansion to reduce noise under smooth sounds (i.e. vocals, woodwinds)
Preventing sound system overload	
Digital to analog transfers	
High-fidelity music mastering	

Refer to the following pages for suggested initial settings. These settings should suffice for fundamental compressing and gating requirements. However, the GECKO® ETERNITY CMP 2408 accomplishes many more improvements to sound quality. We recommend that you begin experimenting with the GECKO® ETERNITY CMP 2408's controls, with our suggested settings. Thereafter run them with different settings and experiment with other combinations of compressor and gating controls, and create a perfect sound for your needs. You will be surprised at what you hear.

CONTROL ELEMENTS

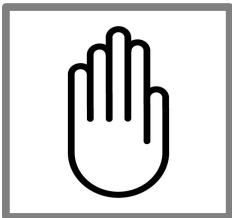**FRONT PANEL**

1. STEREO COUPLE SWITCH

This switch sets the GECKO® ETERNITY CMP 2408 for either stereo or dual-mono operation. Press the STEREO COUPLE switch in for stereo operation where CHANNEL ONE becomes the *master* controller for both channels. All of CHANNEL TWO's controls, switches, and LEDs will be disabled (except for CHANNEL TWO's GAIN REDUCTION meter) since CHANNEL TWO is the *slave*.

With the STEREO COUPLE switch out, the unit functions as two separate mono compressors/gates, each with its own independent controls.

The STEREO COUPLE switch lights up (amber) when the GECKO® ETERNITY CMP 2408 is stereo-coupled.

2. BYPASS SWITCH

Press this switch in to bypass the front panel controls, effectively canceling the function and processing effect of the GECKO® ETERNITY CMP 2408's compression, gating, and gain settings. The input signal is still present at the GECKO® ETERNITY CMP 2408's output but is now unaltered by the GECKO® ETERNITY CMP 2408's controls. BYPASS is especially useful for making comparisons between processed and unprocessed signals.

NOTES: In stereo operation (STEREO COUPLE switch pressed in); the CHANNEL ONE's BYPASS switch controls both channels.
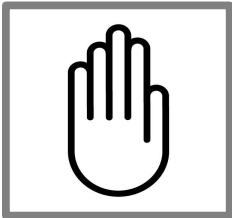
The BYPASS switch lights up (red) when the BYPASS mode is active.

3. GAIN REDUCTION (dB) METER

This meter displays the amount of signal attenuated from the input signal by the GECKO® ETERNITY CMP 2408's compressor or expander/gate. When the compressor and expander/gate are both active, the meter displays the maximum amount of gain reduction for whichever function is greater - compressor or expander/gate.
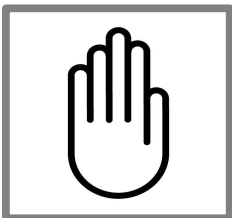
4. OUTPUT GAIN (dB) CONTROL

This OUTPUT GAIN utilizes the revolutionary C.R.I.S.T.A.L.® Audiophile PreAmps at its gain structures for that super clean and natural level compensation. Its control sets the overall gain of the GECKO® ETERNITY CMP 2408, from -20dB to +20dB. The OUTPUT GAIN control is especially useful to compensate for the RMS level decrease which results from the GECKO® ETERNITY CMP 2408's dynamic processing effects. After you adjust the GECKO® ETERNITY CMP 2408's controls for the desired amount of compression, set the OUTPUT GAIN to add the same amount of gain that is shown on the GAIN REDUCTION meters. For example, if the average amount of gain reduction shown on the meters is 10dB, then setting the OUTPUT GAIN control to +10dB will compensate for the 10dB average level reduction at the output.

NOTES: The GECKO® ETERNITY CMP 2408's compressor and expander/gate control settings are interactive and can affect gain, so watch your playback levels.

COMPRESSOR SECTION

NOTES: Setting the compressor RATIO to 1:1 will turn the compressor off, regardless of the setting on the compressor THRESHOLD control and BELOW/OVEREASY/ABOVE LED status. Setting the compressor THRESHOLD control to +20dB will prevent all but the highest peaks from being compressed.

5. OVEREASY SWITCH

Depress this switch to select the OverEasy compression characteristic. The OverEasy switch lights up (green) in this mode. The amber THRESHOLD LED turns on when the signal is in the OverEasy region. When the switch is out, the GECKO® ETERNITY CMP 2408 operates as a hard-knee compressor and the amber LED does not light.

6. THRESHOLD CONTROL

Adjust this control to set the threshold of compression from -40dB to +20dB. In hard-knee mode, the threshold of compression is defined as the point above which the output level no longer changes on a 1:1 basis with changes in the input level.

In OverEasy mode the threshold of compression defined as the middle of the OverEasy threshold region, that is, "half-way" into compression.

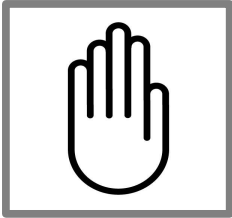## 7. THRESHOLD LEDS (BELOW/OVEREASY/ABOVE)

The three THRESHOLD LEDs show the relationship of the input signal level to the threshold of compression. The green LED lights when the signal is BELOW threshold, the red LED lights when the signal is above the threshold, and the amber LED lights when the OverEasy switch is depressed and the input signal is in the OverEasy range.

The GECKO® ETERNITY CMP 2408's OverEasy compression permits extremely smooth, natural-sounding compression, without artifacts, due to the gradual change of compression around the threshold.

With OverEasy compression, input signals begin to gradually activate the GECKO® ETERNITY CMP 2408's internal gain change circuitry as they approach the THRESHOLD reference level.

They do not get fully processed by the RATIO, ATTACK and RELEASE controls until they have passed somewhat above the THRESHOLD reference level. As the signal level passes the THRESHOLD level, processing increases until it is fully processed to the extent determined by the controls settings

In hard-knee mode, the GECKO® ETERNITY CMP 2408 can provide abrupt compression effects as well as hard-limiting applications. Note that when in hard-knee mode the amber LED will not light as the input signal passes across the threshold. The signal is either being compressed (over threshold) or it is not being compressed (under threshold).

NOTES: Even though no input signal is present, it is normal for the LEDs to flicker when the power is applied or removed.

8. RATIO CONTROL
Adjust this control to set the amount of compression applied to the input signal. Clockwise rotation of this control increases the compression ratio from 1:1 (no compression) up to ∞:1 (where the compressor is considered a peak limiter, especially with faster ATTACK settings).

When an input is above the THRESHOLD setting reference level, the RATIO setting determines the number of decibels by which the input signal must increase in level to produce a 1dB increase in the signal level at the output. A setting of 2:1 indicates an input/output ratio wherein a 2dB increase in signal (above threshold) will produce a 1dB increase in the output signal. A setting of ∞:1 indicates that an infinite increase in input level would be required to raise the output level by 1dB.
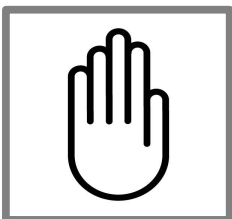
9. ATTACK CONTROL
The ATTACK control sets the amount of time it takes for the GECKO® ETERNITY CMP 2408 to begin compressing a signal once the detector has sensed a signal above a threshold. The ATTACK range is from FAST (for a tighter and more noticeable compression effect with very little overshoot) to SLOW (for more delayed, gradual compression). A very fast ATTACK setting will cause the GECKO® ETERNITY CMP 2408 to act as a peak limiter even though RMS detection circuitry is used. Slower ATTACK settings cause the GECKO® ETERNITY CMP 2408 to act like an RMS or averaging-detecting compressor/limiter.

10. RELEASE CONTROL
The RELEASE control sets how fast the compression circuit returns the input to its original level. The RELEASE rate is from FAST (where compression follows the envelope of the program material very tightly) to SLOW (for very smooth compression).

There is no absolute right way to set the ATTACK and RELEASE controls. However, in general, you will want them set slow enough to avoid "pumping" or "breathing" sounds caused when background sounds are audibly modulated by the dominant signal energy, yet the release must be fast enough to avoid suppression of the desired signal after the sudden transient or loud note has decayed.

NOTES: ATTACK and RELEASE controls work together with the RATIO control. Changing one control may necessitate adjusting another control setting.

11. AUTO SWITCH

This switch overrides both the ATTACK and RELEASE controls and enables preset program-dependent attack and release times. These times are derived from the input signal and continuously change to match its dynamics. The AUTO switch lights up (green) in this mode.

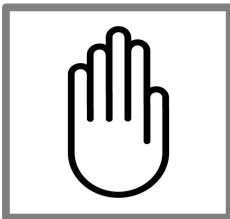# EXPANDER/GATE SECTION

12. THRESHOLD CONTROL

Adjusting this control sets the level at which the gate will open and allow the signal at the input to pass through to the output. Turning the knob fully counter-clockwise (to OFF) allows the gate to pass all signals unattenuated, effectively bypassing the gate. Turning the knob fully clockwise causes the gate to attenuate input signals below +15dBu. The depth of attenuation depends on the setting of the expander/gate RATIO control.

13. THRESHOLD LEDS (BELOW/ABOVE)

The two LEDs indicate the relationship of the input signal level to the threshold setting. The red LED lights up when the signal is BELOW the threshold, the green LED lights up when the signal is ABOVE the threshold.
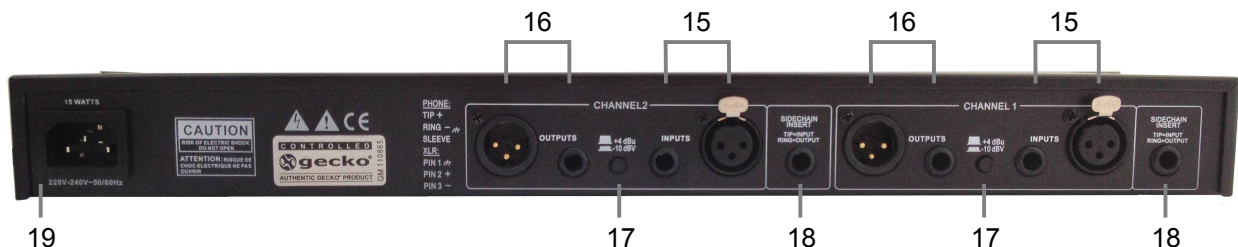
14. RATIO CONTROL

This control sets the amount of attenuation applied to the input signal once it is below the threshold, from gentle downward expansion (appropriate for vocals, etc.), to a hard gating effect (which is useful for percussion, etc). Fairly low RATIO (and higher expander/gate THRESHOLD) settings work best for downward expansion, whereas higher RATIO settings (clockwise towards MAX) work best for gating. If a setting produces undesirable pumping, readjust the expander/gate RATIO or the THRESHOLD setting.

NOTES: The attack and release rate of the expander/gate are program-dependent - very fast for transient material (i.e. percussion) and slower for material with a slow attack (i.e. vocals). Fast gating sustained low-frequency signals can result in "chattering". To eliminate any "chattering", simply adjust the RATIO control. The proper THRESHOLD setting will also minimize false triggering and "chattering".

REAR PANEL

15. INPUTS (CHANNEL ONE AND CHANNEL TWO)

Use ¼" TS unbalanced, ¼" TRS balanced, or balanced XLR (male) connectors to connect these inputs to your source. The INPUTS accept either balanced or unbalanced signals. Input impedance is >40kΩ.
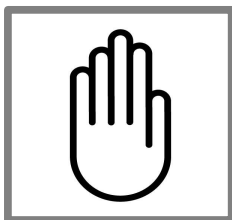
16. OUTPUTS (CHANNEL ONE AND CHANNEL TWO)

The OUTPUTS accept ¼" TRS balanced, ¼" TS unbalanced, or balanced XLR (female). Maximum output signal level is >+20dBu. In the +4dBu setting, the balanced output impedance is 100Ω, and the unbalanced output impedance is 50Ω. In the -10dBV setting, the balanced output impedance is 1kΩ and the unbalanced output impedance is 500Ω.

17. OPERATING LEVEL SWITCH

This switch selects between a -10dBV and +4dBu nominal operating level. When the switch is pressed to the IN position, a -10dBV operating level is selected. When depressed to OUT position, a +4dBu operating level is selected.
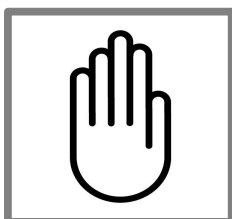
18. SIDECHAIN INSERT

Accepts ¼" TRS connectors and provides a connection to the GECKO® ETERNITY CMP 2408 detector path. The RING (of the ¼" TRS) acts as a SEND, carrying a buffered version of the signal present at the INPUTS, at an impedance of 2kΩ. The TIP (of the ¼" TRS) acts as a RETURN for equipment to feed the detector circuitry, such as an equalizer (i.e. GECKO® DESTINY EQ 7043) for de-essing or frequency sensitive gating/compression. You can also drive the GECKO® ETERNITY CMP 2408's SIDECHAIN input with the output of most equipment, by using a ¼" TS connector. Input impedance is greater than 10kΩ.

NOTES: When a cable is plugged into this SIDECHAIN INSERT, it automatically breaks the connection from the INPUT to the detection circuitry.

19. IEC - AC POWER CORD RECEPTACLE

Plug the AC power cord (supplied) into the GECKO® ETERNITY CMP 2408. Plug the other end into a standard wall power outlet. Take care to route power cables away from audio lines.

NOTES: The GECKO® ETERNITY CMP 2408 does not have a power switch. It is recommended that the unit be left in the "ON" state all the time. Power consumption is low. If you do not plan to use the GECKO® ETERNITY CMP 2408 for a long time, unplug it.

WARNING: Be sure to verify your live line voltage is the same as the voltage level printed below the AC power receptacle. Connection to an inappropriate power source may result in extensive damage which is not covered by the warranty.

MAKING CONNECTIONS

The GECKO® ETERNITY CMP 2408 can be used with any professional audio device. Some common examples include mixing consoles (i.e. GECKO® EXODUS series mixing consoles), microphones (i.e. GECKO® PASSION and SATELLITE series microphones), signal processors, electronic musical instruments, and patch bays.

For all connections, refer to the following steps:

1. Turn OFF all equipment before making any connections;

2. Mount the GECKO® ETERNITY CMP 2408 onto a 1U rack space (not included). You can mount it above or below anything that does not generate excessive heat. Although it requires no special ventilation, ambient temperatures should not exceed 113°F (45°C) when all the equipment is turned on;

3. Make connections using quality audio cables (i.e. GECKO® TRUTH T3AL audiophile-grade signal cable) and connectors (i.e. GECKO® OLYMPIAN or GECKO® AUDIOPHILE series audiophile-grade connectors) according to your requirements. Typical patch points include mixing console's channel inserts or subgroup inserts when using the unit on each instrument or track. We recommend you to experiment with different setups to see which one provides the best results for your needs;

4. Connect the AC power cord (supplied) to the unit's rear panel POWER receptacle and to an appropriate AC power source;

5. Alternatively, you could set up the power-up and down sequence of your system using the GECKO® GALILEE CLASSIC PSC 8330 power sequencer for optimum protection.

SPECIFICATION

Inputs:
Frequency Response: 20Hz ~ 20kHz, -0.5dB
Bandwidth: 0.35Hz ~ 80kHz, -3dB
Impedance: 40kΩ (Balanced), 20kΩ (Unbalanced)
Max Level: +22dBu
Connectors: ¼" TRS (2), XLR Female (2)

Outputs:
Impedance: 100Ω (Balanced), 50Ω (Unbalanced)
Max Level: +21dBu into >2kΩ
Connectors: ¼" TRS (2), XLR Male (2)

Sidechain Inserts:
Input Impedance: >10kΩ
Output Impedance: ≤2kΩ
Max Level: +21dBu
THD + N: <0.002%, any amount of compression at 1kHz
Connectors: ¼" TRS (2)

System Performance:
Intermodulation Distortion: <0.002% SMPTE
Noise: <-93dBu, Unweighted
Dynamic Range: >114dB, Unweighted
Crosstalk: <-93dB @ 1kHz
Common Mode Rejection: >40dB (all frequencies)
Stereo Coupling: True RMS Power Summing
Threshold Characteristics: Automatic Selection or Hard-Knee
Expander/Gate: Program Dependent Threshold
Compressor: -40dB ~ +20dB
Expander/Gate: -60dB ~ +10dB
Ratio: Compressor: 1:1 ~ Infinity:1, Expander/Gate: 1:1 ~ 4:1
Gain Structure: GECKO® C.R.I.S.T.A.L.® Audiophile PreAmps

Attack Time:
Compressor: Scalable Program Dependent
Expander/Gate: <100μs

Release Time:
Compressor: Scalable Program Dependent
Expander/Gate: Program Dependent

Physical Properties:
Enclosure: Steel
Color: Metallic Grey
Net Weight: 2.5kg
Dimension: (H) 45mm x (W) 483mm x (D) 150mm

Specifications subject to change without prior notice. Manufactured under ISO9000 certified management system.

WARRANTY

GECKO MUSIC GROUP warrants its GECKO® products for a period of one (1) year from the original date of purchase, in accordance to the warranty regulations described below.

What is Covered:
During the applicable warranty period, GECKO MUSIC GROUP warrants the product against defects in materials and workmanship and against malfunctions. GECKO MUSIC GROUP will remedy all such defects and malfunctions without charge for parts or labour if the warranty applies. In the case that other parts are used which constitutes an improvement, GECKO MUSIC GROUP may, at its discretion, charge the customer for the additional cost of these parts. Final determination of warranty coverage lies solely with GECKO MUSIC GROUP.

What is Not Covered:

1. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country where the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in material or workmanship;

2. Normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, valves, guitar/bass strings, machine heads, pick-up covers, PVC/PU/leather covers, illuminants, and similar parts are not covered by this warranty;

3. Improper handling, neglect or failure to operate the unit in compliance with the instructions given in the user or service manuals;

4. Connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used;

5. Damages/defects caused by force of nature or any other condition that is beyond the control of GECKO MUSIC GROUP;

6. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty;

7. Modification or removal of serial numbers.

Obtaining Warranty Service:

To return a GECKO® product for warranty service, first fill out the Online Technical Report on this website and submit for an authorization/service number. Write the authorization/service number so that it is prominently displayed on the outside of the shipping carton. Any products received without an authorization/service number that is clearly visible upon arrival at the factory will be refused. Enclose proof of the original delivery date or a copy of the original sales receipt/invoice. Enclose a description of the suspected defect or malfunction and the condition, if any, which caused the problem. Return the product to either GECKO MUSIC GROUP or the GECKO® Store where the purchase was made. Note: Before sending back to GECKO MUSIC GROUP, you can first check with your local GECKO® Store or authorized reseller where you buy from for support.

Warranty Shipping:

You are responsible for prepaying shipping costs F.O.B. GECKO MUSIC GROUP, Singapore. Shipped product(s) must be properly packaged. Use original shipping cartons and packing materials where possible. GECKO MUSIC GROUP is not responsible for damages resulting from inadequate and or improper packing.

Products received with damages due to improper packaging will be deemed out of warranty.

Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. GECKO MUSIC GROUP will inform the buyer of such circumstance. If the buyer fails to submit a written repair order within six (6) weeks after notification, GECKO MUSIC GROUP will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

Warranty Rights:

This warranty is exclusive and extended to the original buyer and is not transferable to anyone who may subsequently purchase this product. No other person (apart from authorized GECKO® Stores) shall be entitled to give any warranty promise on behalf of GECKO MUSIC GROUP.