

MBC

Master Buss Converter

总线模数转换器

RUPERT NEVE DESIGNS



Operations Manual

操作手册

Important Safety Instructions

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 a 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 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 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.
15. This apparatus shall not be exposed to dripping or splashing, and no object filled with liquids, such as vases or beer glasses, shall be placed on the apparatus.
16. Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
17. This apparatus has been designed with Class-I construction and must be connected to a mains socket outlet with a protective earthing connection (the third grounding prong).
18. This apparatus has been equipped with a rocker-style AC mains power switch. This switch is located on the rear panel and should remain readily accessible to the user.
19. The MAINS plug or an appliance coupler is used as the disconnect device, so the disconnect device shall remain readily operable.



20. NOTE: 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 a residential installation. 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 the 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.

CAUTION: Changes or modifications to this device not expressly approved by Rupert Neve Designs LLC, could void the user's authority to operate the equipment under FCC rules.

21. This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION — *Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.*

22. 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) has specified the permissible noise level exposures shown in the following chart. According to OSHA, 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. Ear plugs 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:



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.
Le symbole éclair avec point de flèche à l'intérieur d'un triangle équilatéral est utilisé pour alerter l'utilisateur de la présence à l'intérieur du coffret de "voltage dangereux" non isolé d'ampleur suffisante pour constituer un risque d'électrocution.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.
Le point d'exclamation à l'intérieur d'un triangle équilatéral est employé pour alerter les utilisateurs de la présence d'instructions importantes pour le fonctionnement et l'entretien (service) dans le livret d'instruction accompagnant l'appareil.

Duration, per day in hours	Sound Level dBA, Slow Response	Typical Example
8	90	Duo in small club
6	92	
4	95	Subway Train
3	97	
2	100	Typical music via head phones
1.5	102	
1	105	Siren at 10 m distance
0.5	110	
0.25 or less	115	Loudest parts at a rock concert

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

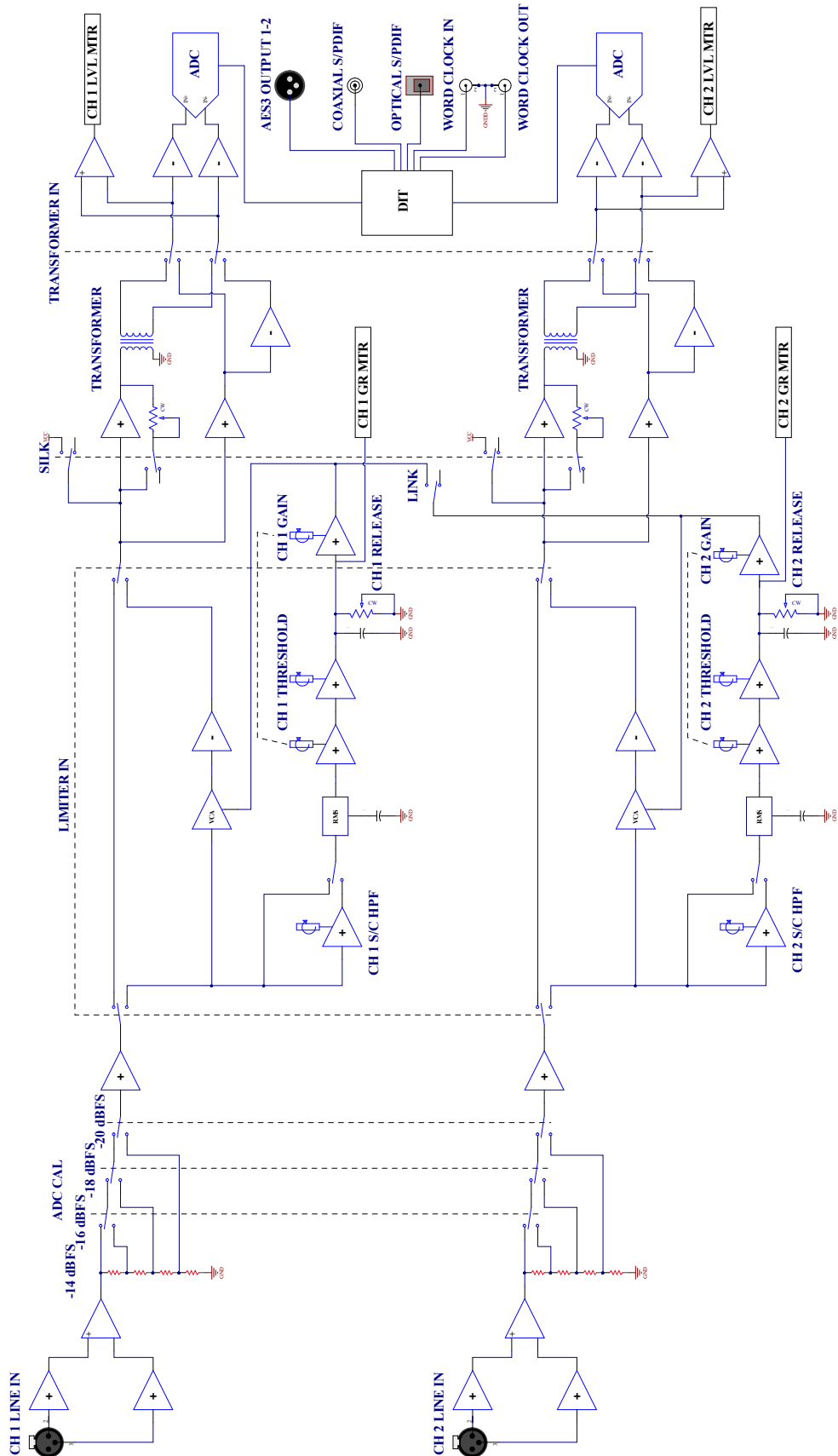
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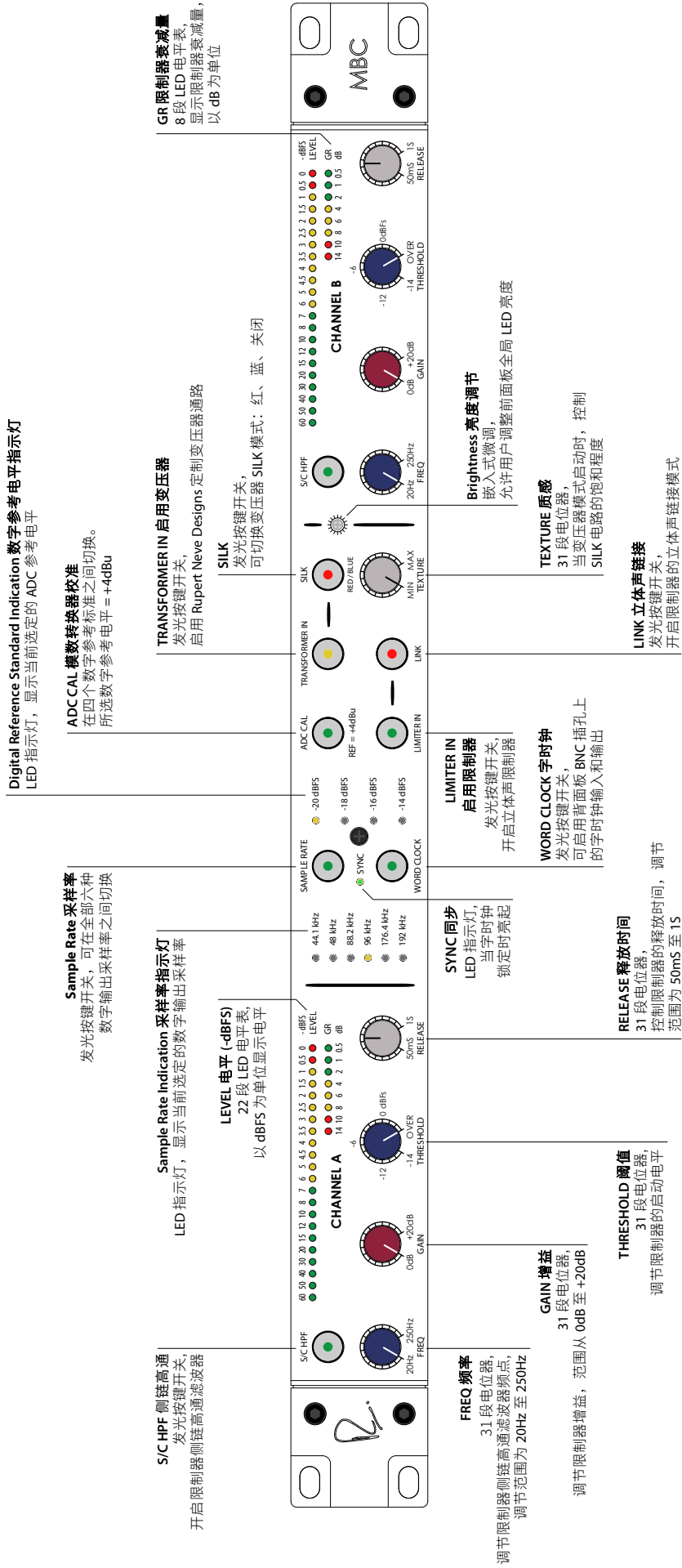
Rupert Neve Designs MBC: Master Buss Converter 总线模数转换器

感谢您购买 Rupert Neve Designs Master Buss Converter。我们希望您使用此产品获得的满足感，能与我们设计和制造它时所获得的乐趣一样多。MBC 包含全 A 类模拟电路设计的信号通路，立体声 VCA 限制器，以及 AKM 模/数转换器。

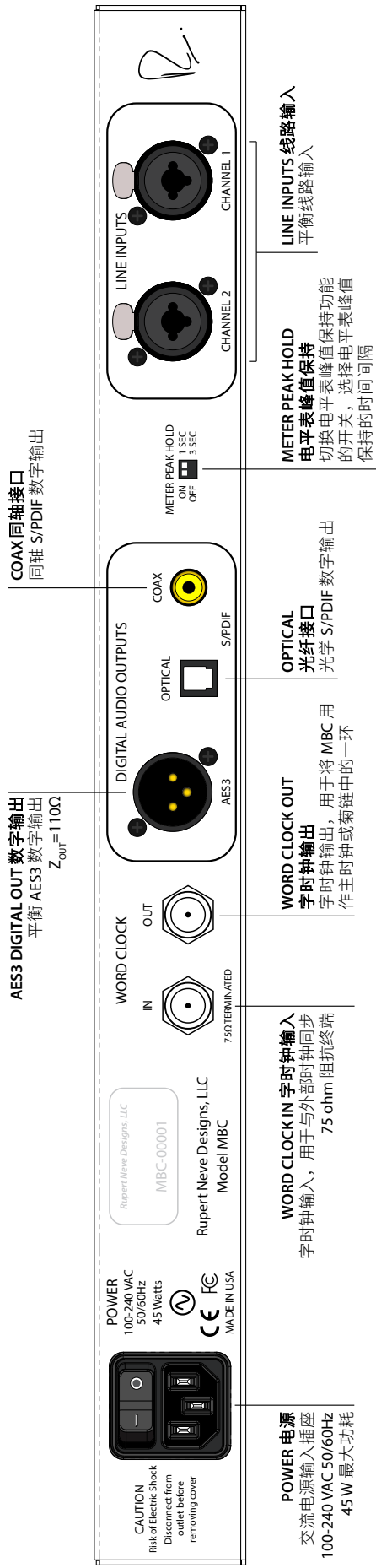
MBC 功能框图



MBC 前面板



MBC 背面板



MBC 前面板功能

Sample Rate 采样率

该发光按键开关可切换 MBC 可用的数字输出采样率：44.1kHz, 48 kHz, 88.2kHz, 96kHz, 176.4kHz, 和 192kHz @ 24 位深分辨率。此外，前面板上还有六个相应的 LED 指示灯，在选择对应采样率时亮起。

Sync 同步

当启用字时钟，且 MBC 检测到来自背面板 WORD CLOCK IN BNC 字时钟输入接口的有效字时钟信号，SYNC 同步指示灯将亮起。

Word Clock 字时钟

该发光按键开关可开启位于 MBC 背面板的 WORD CLOCK IN 字时钟输入与 WORD CLOCK OUT 字时钟输出 BNC 接口。当字时钟输入接口中出现有效字时钟信号时，SYNC 同步指示灯将点亮，采样率状态指示灯将显示当前输入的字时钟速率，同时，字时钟输入信号的缓冲版本将出现在字时钟输出 BNC 接口，以便进行字时钟菊链连接。

ADC Calibration (ADC CAL) 模数转换器校准

该发光按键开关可在 MBC 可用的数字参考标准电平中切换：-14dBFS, -16dBFS, -18dBFS, 和 -20dBFS。选择其中任一数字电平都将与模拟域 +4dBu 电平对齐。此外，四个数字电平相应的 LEDs 指示灯也会在选择对应参考电平时亮起。

Transformer In 开启变压器

该发光按键开关可开启 MBC 模拟信号路径中的 Rupert Neve Designs 定制级间变压器。该变压器电路旨在为音频路径增加谐波特性和音色，同时仍保持高带宽、低失真以及高信噪比。若想获得更多色彩和变压器饱和，您可开启 SILK 饱和功能。

Silk 饱和

该发光按键开关可切换 SILK 变压器饱和模式：OFF 关闭，RED 红 和 BLUE 蓝。红色 SILK 变压器饱和度添加到音频路径中，并进行高频预加重；蓝色 SILK 将变压器饱和添加到音频路径中，并进行低频预加重。

Texture 质感

31 段电位器。当 TRANSFORMER IN 变压器开关激活时，用于控制添加到模拟信号中 SILK 变压器饱和的程度。

Limiter In 开启限制器

发光按键开关，同时接通限制器的两个通道。这便于您对压缩和非压缩信号进行 AB 对比，同时针对原始素材调整并确定适合的压缩特性。

Link 立体声链接

该发光按键开关可开启限制器的立体声链接模式。在立体声链接模式下，对输入信号进行更多限制处理的限制器通道将控制另一通道，以保持均衡的立体声声像。

Side-chain High Pass Filter (S/C HPF) 侧链高通滤波器

限制器侧链具有一个全可变 31 段电位器，用于控制 12 dB / 倍频程萨伦键高通滤波器。这使您可以降低原始素材中低频能量所触发的限制幅度。限制器侧链高通滤波器的调节范围为 20Hz 至 250Hz。

MBC 前面板功能

Gain 增益

该 31 段限制器增益控制 GAIN 允许用户提升输入信号增益，直至电平达到当前设定的阈值。如果增益电平超过阈值，限制器的输出电平将以固定 10:1 比率提升，即输入电平增加每 +10dB，限制器输出电平仅增加 +1dB。

Threshold 阈值

31 段 THRESHOLD 阈值电位器，控制限制器的起始工作电平，并以 -dBFS 单位计量。阈值的完整控制范围从 -14 dBFS (完全逆时针旋转) 至 OVER (完全顺时针旋转)。处于 OVER 位置时，信号经过限制器但不会触发限幅处理。通过这种方式，当用户将限制器阈值降低至 0 dBFS 以内的期望电平值时，可以更精确地控制限幅起始点。

Release 释放时间

该 31 段电位器旋钮控制限制器的 RELEASE 释放时间，范围为 50mS (完全逆时针旋转) 至 1S (完全顺时针旋转)。限制器的启动时间固定为 500 μ S。

MBC 背面板功能

Power 电源

IEC 标准三针脚带接地交流电源插座，配有电源开关。输入范围为交流 100-240VAC 50/60Hz，最大功耗 45W。

Line Inputs 线路输入

MBC 具有两个平衡输入，使用 Neutrik XLR Combo 卡农复合插座。输入拓扑结构设计提供出色的共模抑制以及恒定输入阻抗，无论输入来自平衡信号源还是非平衡信号源。

Digital Audio Outputs 数字输出

MBC 具有三种可用的数字输出连接方式：平衡 AES3 输出、光纤 S/PDIF 输出 和 同轴 S/PDIF 输出。如有需要，三个输出接口可同时连接使用。数字输出将遵循 MBC 前面板所显示的工作采样率。

Word Clock In 字时钟输入

该 75 Ω 终端字时钟输入 BNC 接口用于将 MBC 与外部主时钟同步。当连接有效字时钟信号并开启前面板 WORD CLOCK 字时钟开关时，MBC 将同步至输入速率，数字输出也将相应调整至同一速率。

Word Clock Out 字时钟输出

当前面板 WORD CLOCK 字时钟开关开启时，MBC 将在字时钟输出 BNC 接口中提供字时钟输入信号的缓冲版本。若当前没有有效的字时钟输入信号而前面板 WORD CLOCK 字时钟开关仍处于开启状态时，MBC 将在字时钟输出 BNC 接口中提供自己的内部主时钟。若前面板 WORD CLOCK 字时钟开关未开启，则不会有字时钟输出信号。

Meter Peak Hold 电平表峰值保持

该双拨码开关可调整 MBC 的电平表峰值保持功能。左侧开关为峰值保持功能打开 (上) 和关闭 (下)，右侧开关切换峰值保持时长为 1S (上) 和 3S (下)。

MBC 详细参数

XLR 线路输入至 AES3 数字输出 (限制器旁通)

输入阻抗

共模抑制 @ 1 kHz

$Z_{SOURCE} = 40 \Omega$ 平衡

9.9 k Ω

105 dB 典型值

无变压器通路

频率响应 (20 Hz 至 70 kHz)

+/- 0.025 dB 典型值

THD+N @ 1 kHz @ -2 dBFS (10 Hz - 22 kHz 带宽)

0.0009% 典型值

噪声 (10 Hz - 22 kHz 带宽)

-108 dBFS 典型值

变压器通路

变压器频率响应 (20 Hz 至 70 kHz)

+/- 0.1 dB 典型值

THD+N @ 1 kHz @ -2 dBFS (10 Hz - 22 kHz 带宽)

0.002% 典型值

噪声 (10 Hz - 22 kHz 带宽)

-114 dBFS 典型值

限制器参数 (变压器通路未启用)

$Z_{SOURCE} = 40 \Omega$ 平衡

频率响应 (20 Hz 至 70 kHz)

+/- 0.1 dBFS 典型值

噪声 @ 0 dB 补偿增益 (10 Hz - 22 kHz 带宽)

-107 dBFS 典型值

噪声 @ +20 dB 补偿增益 (10 Hz - 22 kHz 带宽)

-97 dBFS 典型值

产品尺寸 (宽 x 深 x 高)

19" (48.3 cm) x 9" (22.9 cm) x 1.65" (4.2 cm)

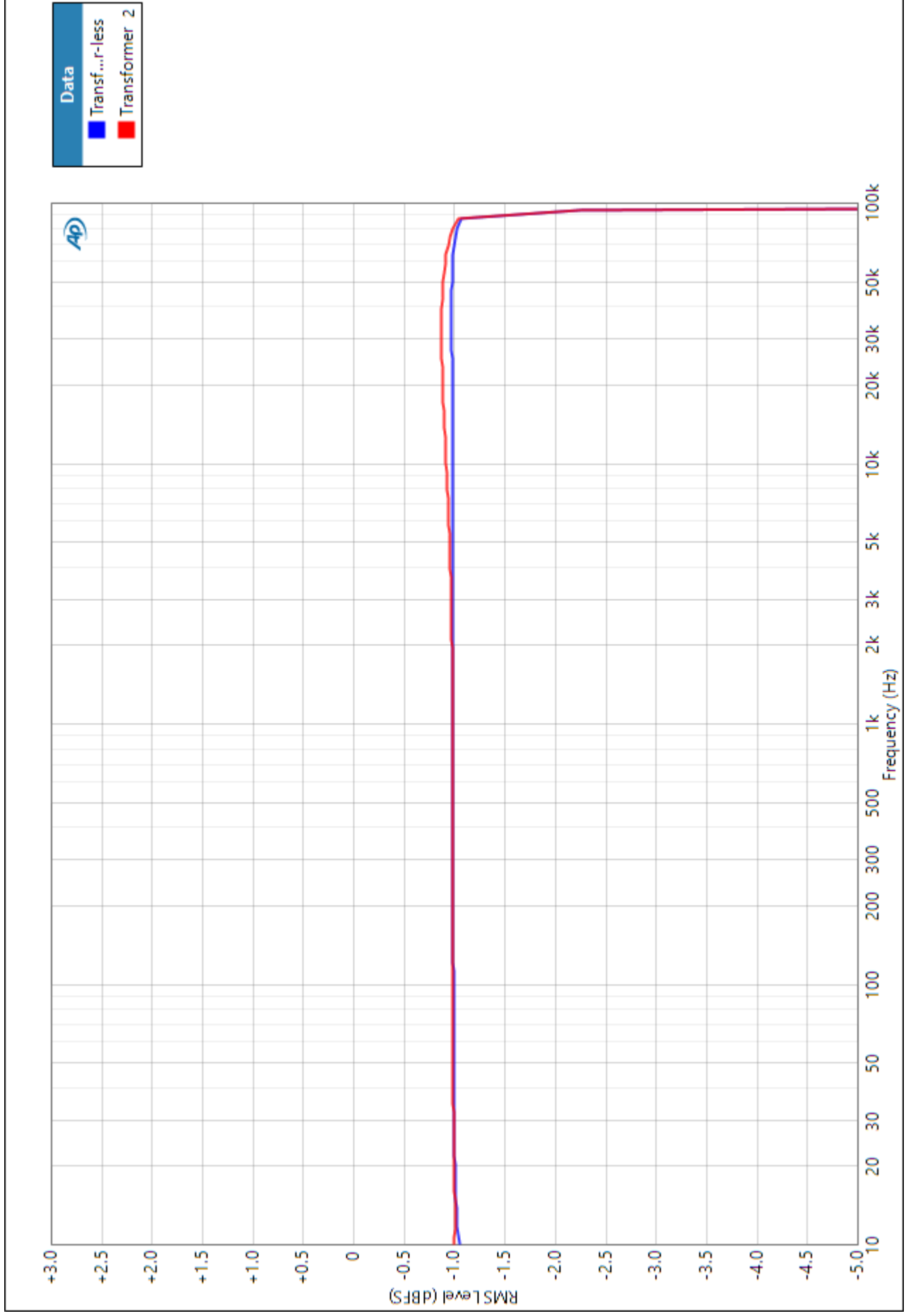
标准尺寸 (长 x 宽 x 高)

24" (61 cm) x 13" (33 cm) x 4" (10.2 cm)

毛重

10 lbs. (4.5 kg)

MBC 频率响应 - 无变压器对比变压器 (192kHz SR)



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PRODUCT WARRANTY

Rupert Neve Designs warrants this product to be free from defects in materials and workmanship for a period of three (3) years from date of purchase, and agrees to remedy any defect identified within such three year period by, at our option, repairing or replacing the product.

LIMITATIONS AND EXCLUSIONS

This warranty, and any other express or implied warranty, does not apply to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, damaged by any dry cell battery, or which has been altered or modified in any way. This warranty is extended to the original end user purchaser only. A purchase receipt or other satisfactory proof of date of original purchase is required before any warranty service will be performed. THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, TO THE EXTENT ALLOWED UNDER APPLICABLE STATE LAW. IN NO EVENT SHALL RUPERT NEVE DESIGNS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT. Some states do not allow the exclusion or limitation of consequential damages or limitations on how long an implied warranty lasts, so this exclusion may not apply to you.

WARRANTY SERVICE

If you suspect a defect in this product, please call us at 512-847-3013 or contact our support staff (service@rupertneve.com) for troubleshooting. If it is determined that the device is malfunctioning, we will issue a Return Material Authorization and provide instructions for shipping the device to our service department.



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