S.M.S.L

Hi-Res AUDIO

B2

使用说明书

深圳市双木三林电子有限公司

提示

- 请将本音响系统安装在通风良好、阴凉、干燥、干净的位置，远离直射阳光、热源、振动、灰尘、 潮湿或寒冷。

- 本机的上面，请不要放置下列物品：
  - 其他装置。因为这样有可能会导致损坏或导致本机表面变色。
  -可燃物品（例如蜡烛）。因为这样有可能导致火灾而损坏本机或造成人身伤害。
  -装有液体的容器。因为有容器反倒，液体流淌的可能，如此有可能导致用户触电或损坏本机。

- 不要在本机上面覆盖报纸，台布，窗帘等，以免妨碍散热。如果本机内部温度过高，则有可能导致火灾，损坏本机或造成人身伤害。
  在使用开关，旋钮或缆线时，不要用力过猛。

- 只能使用本机指定的电压。使用高于指定数值的电压很危险，而且可能导致火灾，损坏本机或造成人身伤害。对于使用高于指定电压造成的任何损害双木三林将不负任何责任。

- 不要试图自行改造或修理本机。如果需要任何服务，请就近与有资格的双木三林维修人员联系。不管有任何理由，都没有打开机壳的必要。

- 如果打算长时间不使用本机（比如度假时），请从墙壁交流电源插座上断开电源线的连接。

- 请务必使用本机附带的AC适配器。使用附带的AC适配器以外的适配器可能导致火灾或损害本机。

- 为了加强对于本产品的保护，在雷电期间，或无人管理时以及长时间不使用时，请将电源线从墙壁上的电源插座上拔下。这样将防止该产品在闪电和电网出现电涌时受到损害。

B2产品描述

B2 是一款USB，BT界面和时钟系统三合一的产品，并且有 USB1.1和USB2.0 两种模式，蓝牙是新一代支持华为 HWA 的 LHDC 编码方案，支持真正无损的 24bit/96kHz数字传输！时钟内置是2颗日本 NDK 超低相位噪声晶振，并且可以与其它数字输出接口组合成时钟同步系统，也可以作为系统主时钟单独对外提供时钟！

B2 同时具有采样率转换功能即 ASRC！可以将 44.1-192kHz 的数字音频智能地异步转换为固定的输出频率!这个功能对于不支持 48kHz 以上采样率的老款 DAC十分友好，可以使老款DAC焕发第二春，继续发挥余热！

产品特点

- 采用第二代XMOS方案支持到32位768kHz和DSD512，支持DoP输出。
- 具备USB1.1模式，因此可以在windows下免驱动使用。
- 最新蓝牙技术，真正支持24bit/96kHz无损传输，其效果与24位USB无异。
- 日本Hi-Res认证，华为HWA认证！
- 2颗日本NDK超低飞秒级相噪晶振！
- 具备ASRC异步采样率转换功能，更好适配老款DAC。
- CPLD时钟系统，大幅降低系统JITTER。
- 内置医疗级低漏磁线性电源。
- 具备时钟同步输出，甚至可以作为独立时钟源使用！
- 超低JITTER的LVDS规格的I2S输出，模式可选，适配不同品牌定义。
- 阳极氧化CNC铝合金外壳。
- 全功能遥控。

技术参数

输入接口 .....蓝牙，USB

输出接口 .....I2S, 光纤, 同轴, AES/EBU, 时钟(BNC)

USB传输方式.....异步传输

蓝牙编码 .....SBC，LHDC

时钟频率 .....Same as FS mode: 44.1k ~ 768kHz

other mode: 44.1k, 48k, 88.2k, 96k, 176.4k, 192k, 11.2896M, 12.288M

输入位深 .....USB 1bit， 16bit ~ 32bit

蓝牙 16bit ~ 24bit

输入采样率 .....USB 44.1kHz ~ 768kHz

DSD64 ~ DSD512

蓝牙 44.1kHz ~ 96kHz

输出位深 .....I2S 1bit， 16bit ~ 32bit

光纤、同轴、AES/EBU 16bit ~ 24bit

输出采样率 .....I2S 44.1kHz ~ 768kHz

DSD64 ~ DSD512

光纤、同轴、AES/EBU 44.1kHz ~ 192kHz

DoP64

消耗功率 5W

待机功率 .....＜0.5W

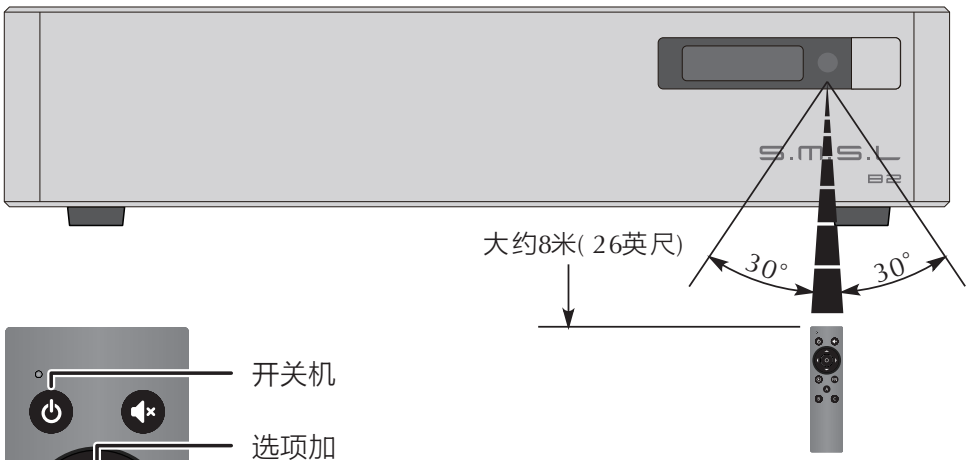
体积.....185x40x125 (WxHxD)

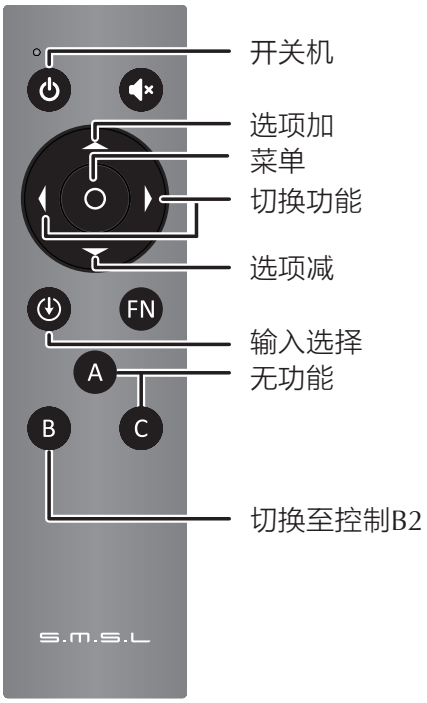
重量.....1.0kg

关于遥控器

- 如果遥控器距离本机很近时操作仍无效，请用新电池更换。
- 如果要长时间不使用遥控器，请取出遥控器的电池。
- 按照电池处置的地方性法规处置废旧电池。

遥控器使用工作范围

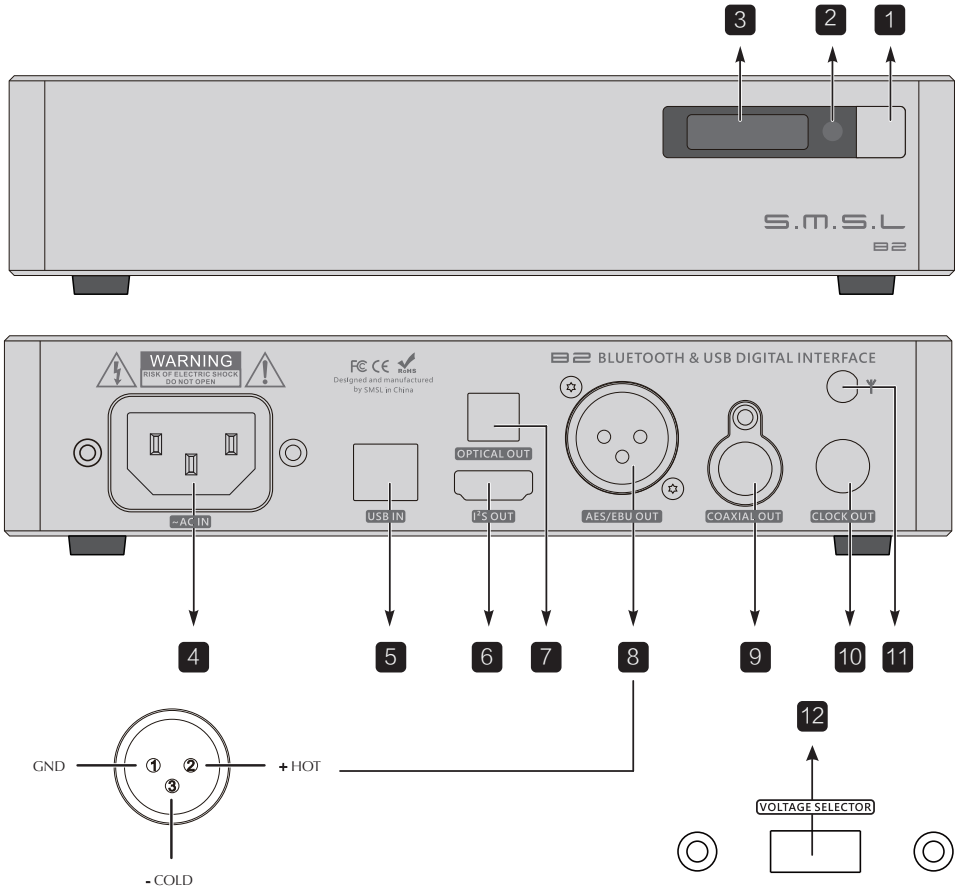




注意

1. 遥控器请使用2节7号(AAA)电池
2. 第一次操作B2时，先按B键

显示界面和操作介绍



1 电源/输入按键　2 红外接收窗　3 显示屏

4 电源输入　5 USB 输入　6 I2S 输出[1]

7 光纤输出　8 AES/EBU 输出　9 同轴输出

10 时钟输出　11 蓝牙天线　12 电压选择开关[2]

注：

1、I2S输入使用普通的HDMI线连接，不需要使用特制的线材。

2、这个开关在出厂前已经设置好，在确定你使用的电压前，请勿改变此开关设定！否则会导致本机损坏甚至导致火灾!

菜单界面介绍和操作

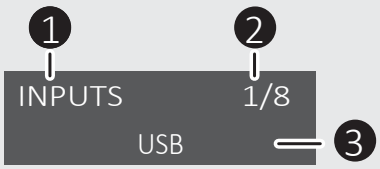
操作说明

电源/输入按键

长按“电源/输入”键打开或关闭电源

短按“电源/输入”键切换输入源，输入会在“USB，蓝牙”之间切换

菜单：



有8页的设置，屏幕如下图所示。

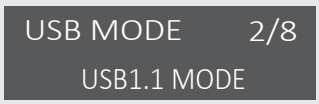
❶ 菜单名称
❷ 菜单页码
❸ 菜单内容

1. 输入：
- USB
- BLUETOOTH

本机采用的蓝牙模块是真正的24bit/96kHz的蓝牙模块，并且同时支持普通蓝牙 和LHDC编码，华为手机直接支持此编码！非华为手机需要安装海贝音乐(Hiby Music)播放器来实现对高清格式的支持！

https://www.hiby.com/cpcc/index_14.aspx

注: 当正在使用蓝牙功能时, 其它手机要连接本设备时, 当前手机必须关闭蓝牙或断开连接!



2. USB模式：
- USB1.1 MODE
- USB2.0 MODE

本机USB接口支持USB1.1和USB2.0两种模式：

USB1.1的作用是在windows系统下无需安装驱动程序，即插即用！但USB1.1只支持到24bit/96kHz，不支持DSD！

USB2.0支持所有音频格式，但是需要到我们的官方网站下载XMOS驱动程序！下载地址：

http://www.smsl-audio.com/download.asp

ASRC MODE 3/8
ASRC OFF

3. ASRC MODE:
- ASRC OFF
- ASRC to 44.1/48
- ASRC to 88.2/96
- ASRC to 176.4/192

异步采样率转换ASRC，俗称升频，但真正意义上是转换而不单是提升频率，它是异步工作的，具体原理为 DSP 读取输入信号，再根据当前的模式，重新运算出一个和采样率相当的数据输出，因此可以做到输入输出异步工作，不使用输入信号的时钟，从而达到减少“数字信号传输过程JITTER”的功能！

这个ASRC还有一个作用就是实现固定采样率输出在44.1~192kHz的范围内，无论输入什么采样率，都可以固定一个你设定好的频率输出。当然，为了达到最佳效果，我们设计了一个自适应程序，让频率只能在倍频间变化。

例如：

菜单设定为 ASRC to 176.4/192, 此时输入信号为 44.1kHz, 则此时输出信号的采样率会固定为176.4kHz，如果将输入信号改为 48kHz，则输出会变为192kHz。

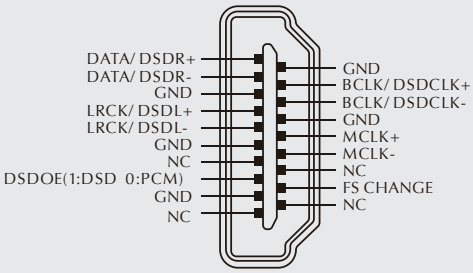
I2S MODE 4/8
Normal

4. I2S MODE:
- Normal
- LRCK&DATA INV
- DSD L/R SWAP
- INV+SWAP

I2S模式设置，由于I2S接口并非一个真正意义上有统一标准的接口，因此不同厂家在引脚定义上会有不同，因此我们设计一级菜单用于改变这些模式：

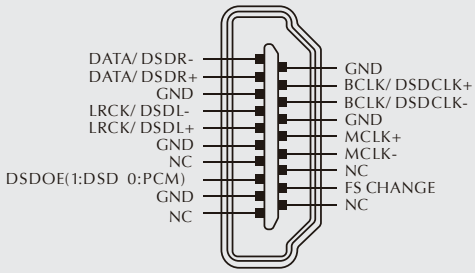
1. Normal就是我们定义的接口定义，如图1；
2. LRCK&DATA INV是LRCK和DATA两组数据的相位是相反的，如图2；
3. DSD L/R SWAP是在DSD传输时，左右声道交换，但引脚定义如图1；
4. INV+SWAP是在DSD传输时，左右声道交换，但引脚定义如图2。

I2S 接口引脚定义



I2S NORMAL

（图1）



I2S INVERTED

（图2）

CLOCK MODE 5/8
Same as FS

5. CLOCK MODE:

- Same as FS
  (与采样率一样)
- 1x (44/48k)
  (1倍速率即输出44.1k或48k)
- 2x (88/96k)
  (2倍速率即输出88.2k或96k)
- 4x (176/192k)
  (4倍速率即输出176.4k或192k)
- 256x(11/12m)
  (256倍速率即输出
  11.2896MHz或12.288MHz)
- 44.1kHz
- 48kHz
- 88.2kHz
- 96kHz
- 176.4kHz
- 192kHz
- 11.2896MHz
- 12.288MHz

时钟模式有三种：

1. Same as FS与采样率一样，即与SPDIF/I2S信号的采样率是一致的；范围是44.1kHz~768kHz。

2. 1x，2x，4x，256x，这4个是固定倍率，但具体的输出频率要根据音乐的基频，即44.1k或48k来自动切换！例如，音乐是44.1k采样率，当此项设置为4x时，时钟输出的频率就是
   44.1k x 4 = 176.4kHz；

3. 在44.1kHz，48kHz，88.2kHz，96kHz，176.4kHz，192kHz，11.2896MHz，12.288MHz设置时，B2工作在主时钟源的状态下，此时输出的频率为固定的频率，不会根据音乐的采样率改变！

注意：播放DSD时，时钟固定输出44.1kHz！

DISP MODE 6/8
INPUT

6. DISP MODE
- INPUT (输入源)
- SAMPLE RATE(采样率)

这级菜单用于选择，显示屏在静态时显示的内容！显示是输入源或者是当前的音频采样率！

注意：静态显示时，USB显示为usb，蓝牙显示为hdbt！

DIMMER 7/8
Auto Display OFF

7. DIMMER
- Auto Display OFF,
- Brightness MIN,
- Brightness 2,
- Brightness 3,
- Brightness MAX

这级菜单是用于改变显示屏的亮度和工作模式：

当为Auto Display OFF时，它的亮度和MIN是一样的，但多个自动熄屏功能，打开这个模式后，系统会在5秒后自动关掉显示，任意操作会让显示重新点亮。

当为MIN~MAX时，显示不会关掉，MIN是最暗，MAX是最亮！

USB1.1 DFU 8/8
UP/DOWN to start

8. USB1.1 DFU
- UP/DOWN to start

本页菜单用于升级USB1.1模式的固件，USB2.0的固件不用在本页菜单中操作。具体的操作步骤会在升级固件压缩包内有说明，在此不作详细说明。

恢复出厂设置

机器在未通电状态下，按住开机键再通电，直到显示屏点亮之后，松开按键。

保修条款

一、服务期限

深圳市双木三林电子有限公司承诺产品的良好品质，产品自售出之后7天内正常使用情况下出现故障，客户可以选择退货或者保修（不影响二次销售才可退货）。正常使用一年内出现故障可以免费保修。

二、购买日期以销售商开出的购机发票或收据日期为准，多购可以交易截图为准。

三、有以下情况都不能享受“三包”服务

- 一切人为因素损坏，包括非正常工作环境下使用或不按照说明书使用；
- 用户私自拆机、改装、维修；
- 使用非指定或许可的配件造成损坏的；
- 机身的QC或保修贴损毁；
- 不能出示有效购机凭证；
- 不属于本公司产品。

四、保修方式为送修

此条款只适于中国大陆，其它地区请参考当地销售代理商的规定和国家法规。

深圳市双木三林电子有限公司
地址：深圳市宝安区福永街道和平骏丰工业园B6栋8楼
电话：+86-755-27444178
http://www.smsl-audio.com/

S.M.S.L

Hi-Res AUDIO

B2

USER MANUAL

http://www.smsl-audio.com/

TIPS

- Install this unit in a well ventilated, cool, dry, clean place-away from direct sunlight, heat sources, vibration, dust, moisture, or cold..

- On the top of this unit, do NOT place:
  -Other components, as they may cause damage or discoloration on the surface of this unit.
  -Burning objects (i.e. candles) , as they may cause fire , damage to this unit , or personal injury.
  -Containers with liquid in them, as they may fall and liquid may cause electrical shock to the user or damage to this unit.

- Do not cover this unit with a newspaper, tablecloth, curtain , etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, or personal injury.

- Only the voltage specified on this unit must be used. Using this unit with a higher voltage than specified is dangerous and may cause fire , damage to this unit, or personal injury. SMSL will not be held responsible for any damage resulting from use of this unit with a voltage other than that specified.

- Do not attempt to modify or fix this unit. Contact qualified SMSL service personnel when anyservice is needed. The cabinet should never be opened for any reason.

- When not planning to use this unit for long periods of time (i.e. when going on vacation), disconnect the power cable from the AC wall outlet.

- Be sure to use the AC adaptor supplied with this unit. Using an AC adaptor other than the one provided may cause fire or damage to this unit.

- For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.

Features

B2 is USB/BT interface and clock source,Bluetooth is LHDC encoding by HUAWEI HWA, supporting lossless 24bit/96kHz digital transmission! The built-in clocks are two Japanese NDK ultra-low phase noise crystal oscillators, and can be combined with its SPDIF digital output interface to form a clock synchronization system, or it can be used as the system master clock to provide a low-jitter clock!

B2 also has built-in Asynchronous Sampling Rate Conversion (ASRC)! Its very friendly to the old DAC which does not support the sampling rate above 48kHz!

Features

- Supports 32bit 768kHz and DSD512 with 2nd XMOS solution, supports SPDIF DoP output.
- With USB1.1 mode, it can works without driver in windows.
- The HUAWEI HWA LHDC Bluetooth technology, supports 24bit/96kHz lossless transmission, the performance is the same as 24bit USB audio.
- Japan Hi-Res certification, HUAWEI HWA certification!
- 2 Japanese NDK ultra-low phase noise crystal oscillators!
- High speed CPLD clock system for lower JITTER.
- Asynchronous sample rate conversion (ASRC) function, useful for low resolution DACs.
- Built-in hospital grade low magnetic flux leakage power transformer.
- With word clock output, even as an independent clock source!
- Ultra low JITTER LVDS I2S output(HDMI connector), 4 modes adapting different brand definitions.
- Anodized CNC aluminum alloy casing.
- Full function remote control.

Specification

Inputs .....BT，USB

Outputs .....I2S, OPTICAL, COAXIAL, AES/EBU, Clock(BNC)

USB transmission mode .....Asynchronous

Bluetooth codec .....SBC，LHDC

Clock frequencies .....Same as FS mode: 44.1k ~ 768kHz

other mode: 44.1k, 48k, 88.2k, 96k, 176.4k, 192k, 11.2896M, 12.288M

Input bit depth .....USB 1bit，16bit ~ 32bit

BT 16bit ~ 24bit

Input sample rate .....USB 44.1kHz ~ 768kHz

DSD64 ~ DSD512

BT 44.1kHz ~ 96kHz

Output bit depth .....I2S 1bit，16bit ~ 32bit

OPTICAL, COAXIAL、AES/EBU 16bit ~ 24bit

Output sample rate .....I2S 44.1kHz ~ 768kHz

DSD64 ~ DSD512

OPTICAL, COAXIAL、AES/EBU 44.1kHz ~ 192kHz

DoP64

Power Consumption 5W

Standby power .....＜0.5W

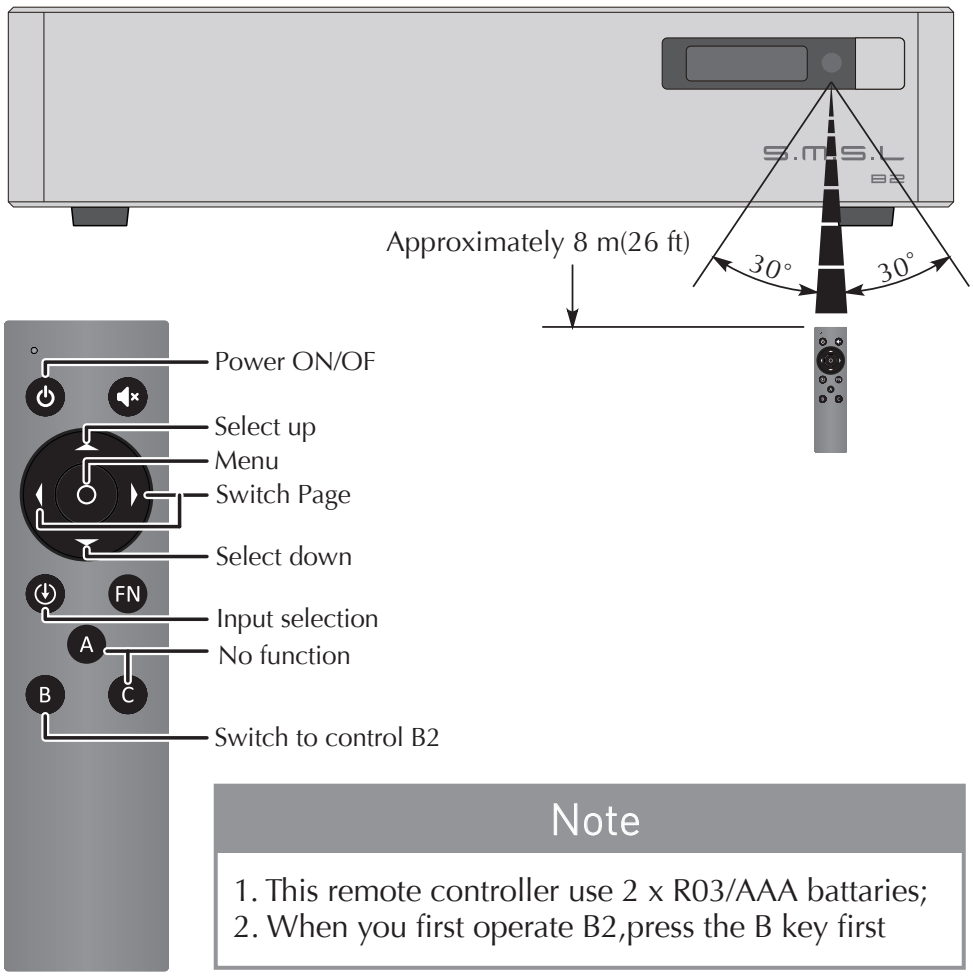
Size .....185x40x125 (WxHxD)

Weight 1.0kg

Remote control

- Install 2 x AAA batteries as instructions
- When using the remote control, point it toward the remote con-trol signal receiver on the main unit from a distance of 5 m (16 ft) or less. Do not place obstructions between the main unit and the remote control.
- The remote control might not work if the remote control signal receiver on the unit is exposed to direct sunlight or bright light. If this occurs, try moving the unit.
  Beware that use of this remote control could cause the unin-tentional operation of other devices that can be controlled by infra.

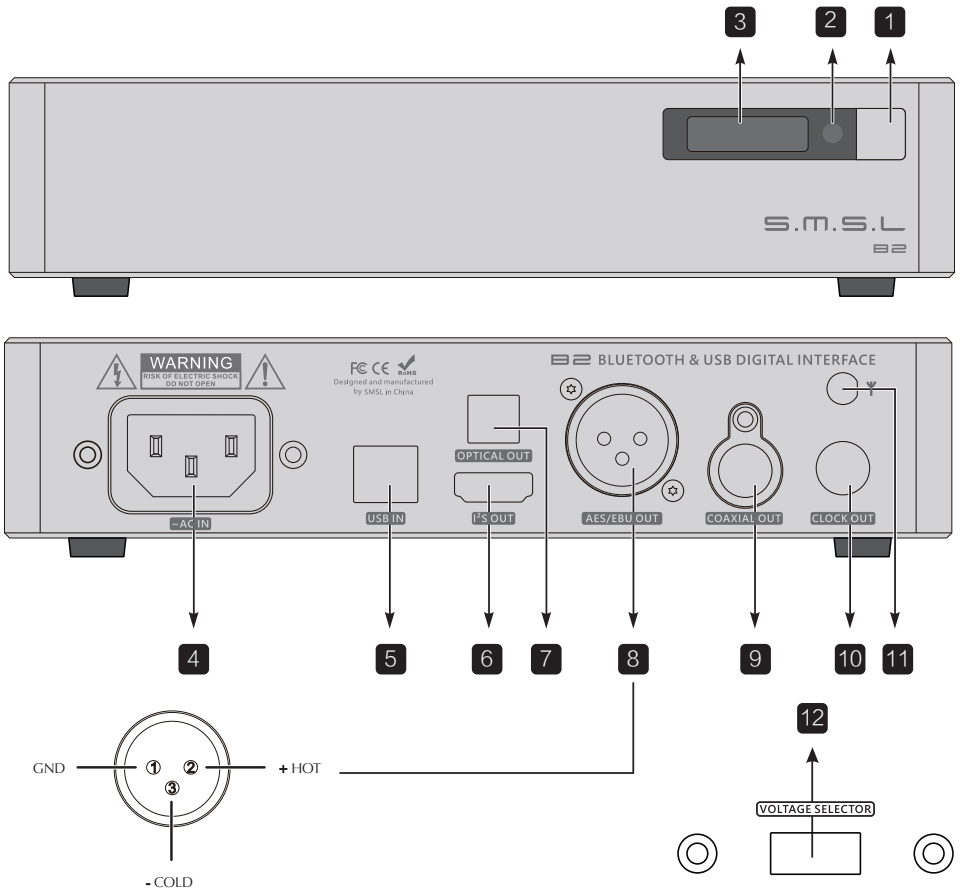
Operating range of the remote control



Note

1. This remote controller use 2 x R03/AAA battaries;
2. When you first operate B2,press the B key first

Features



1 Button	2 Remote window	3 Display
4 AC IN	5 USB IN	6 I2S Output [1]
7 Optical Out	8 AES/EBU Out	9 Coaxial Out
10 Clock Out	11 BT ANT	12 Voltage Selector [2]

Note:

1. I2S input is connected by ordinary HDMI cable, and no special cable is required.
2. This Voltage Selector has been preset before leaving the factory!DO NOT change it before you confirm you mains AC voltage,or it will cause damage to the unit or fire.

Change Settings

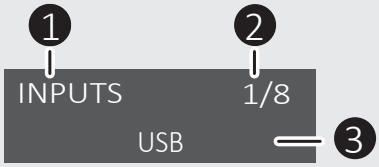
Instructions

BUTTON

Short press : Menu Switch

Long press : Power ON/OFF or quit menu

SETUP MENU:



There are 8 pages of settings in this menu.

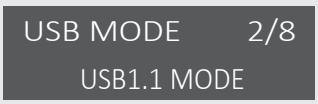
- A Current page name
- B Current page position
- C Current page settings

1. INPUTS:
   - USB
   - BLUETOOTH

The Bluetooth is real 24bit/96kHz not SRC and support both normal Bluetooth(SBC) and LHDC encoding, HUAWEI phones with HWA will built-in LHDC decoder ! Non-Huawei mobile phones need to install a "Hiby music" player to support LHDC format!

Download the app at:
https://www.hiby.com/cpcc/index_14.aspx

Note: When using Bluetooth function, other mobile phones need to connect to this device, the current mobile phone must turn off Bluetooth or disconnect!



2. USB MODE:
   - USB1.1 MODE
   - USB2.0 MODE

The USB supports USB1.1 and USB2.0 modes.

USB1.1 MODE is driverless in windows system, plug and play! But USB 1.1 only supports 24bit/96kHz, does not support DSD!

USB2.0 MODE supports all audio formats, but you need to install a driver on windows, which you can download at:
http://www.smsl-audio.com/download.asp

ASRC MODE 3/8
ASRC OFF

3. ASRC MODE:
- ASRC OFF
- ASRC to 44.1/48
- ASRC to 88.2/96
- ASRC to 176.4/192

Asynchronous Sampling Rate Conversion (ASRC), It works asynchronously. The specific principle is that the input signal is read by the DSP, and then a data output corresponding to the sampling rate is re-calculated according to the current mode. Therefore, the input and output asynchronous works, can be achieved without using the master clock of the input signal!

Another function of this ASRC is to achieve a fixed sampling rate output! In the range of 44.1-192k, no matter what sampling rate you playing, you can get a fixed frequency output. Of course, in order to achieve the best peformance, we have designed an adaptive program, so that the frequency can only change between multiplications.

For example, if the menu is set to ASRC to 176.4/192 and the input signal is 44.1k, the sampling rate of the output signal will be fixed at 176.4kHz. If the input signal is changed to 48kHz, the output will be 192kHz.

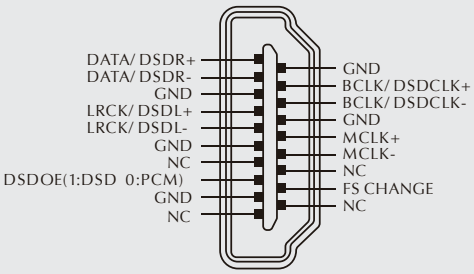
I2S MODE 4/8
Normal

4. I2S MODE:
- Normal
- LRCK&DATA INV
- DSD L/R SWAP
- INV+SWAP

I2S mode settings, because I2S interface is not really a unified standard interface, so different manufacturers will have different pins definitions, so we design a menu page to change these modes:

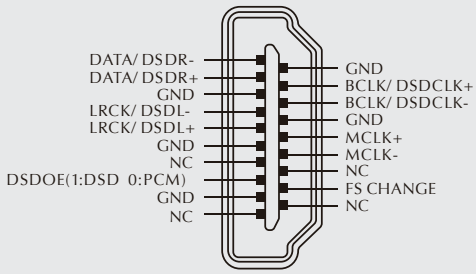
1. **NORMAL** is the pins definition we defined, as shown in Figure 1 below.
2. **LRCK&DATA INV** is the inverted phase of LRCK and DATA, as shown in Figure 2 below.
3. **DSD L/R SWAP** is the swapping of left and right channels in DSD streaming, but pins definition is shown in Figure 1.
4. **INV+SWAP** is the swapping of left and right channels in DSD streaming, but pins definitions are shown in Figure 2.

I2S Pins Functions



I2S NORMAL

(Figure 1)



I2S INVERTED

(Figure 2)

CLOCK MODE 5/8
Same as FS

5. CLOCK MODE:
- Same as FS
- 1x (44/48k)
- 2x (88/96k)
- 4x (176/192k)
- 256x(11/12m)
- 44.1kHz
- 48kHz
- 88.2kHz
- 96kHz
- 176.4kHz
- 192kHz
- 11.2896MHz
- 12.288MHz

There are 3 clock modes:

1. **Same as FS** is the same as the sampling rate, which is consistent with the sampling rate of the SPDIF/I2S signal;

2. **1x, 2x, 4x, 256x**, these 4 are fixed multiplier, but the specific output frequency should be automatically switched according to the music's basic frequency, ie 44.1k or 48k!

   For example, the music is 44.1k sampling rate. When this item is set to 4x, the frequency of the clock output is 44.1k x 4 = 176.4kHz.

3. At 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz, 11.2896MHz, 12.288MHz, B2 works in the state of the master clock source. At this time, the output frequency is fixed, not according to music!

DISP MODE 6/8
INPUT

6. DISP MODE
- INPUT
- SAMPLE RATE

This page menu is used to select what the display will display when it is static! The display can be the input source or the current audio sample rate!

DIMMER 7/8
Auto Display OFF

7. DIMMER
- Auto Display OFF,
- Brightness MIN,
- Brightness 2,
- Brightness 3,
- Brightness MAX

This page menu is used to change the brightness and dimmer:

When it is Auto Display OFF, its brightness is the same as MIN, but with auto-off functions. When this mode is turned on, the system will automatically turn off the display after 5 seconds, and any operation will make the display re-light.

When it is MIN~MAX, the display will not turn off, MIN is the darkest, MAX is the brightest!

USB1.1 DFU 8/8
UP/DOWN to start

8. USB1.1 DFU
- UP/DOWN to start

This page menu is used to upgrade the firmware of USB1.1 mode. The firmware of USB2.0 does not need to be operated in this page menu. The specific steps are described in the upgrade firmware package when it is one, and will not be described in detail here.

Factory Reset

Connect the power cord when pressing the power button, until display is ON.

Warranty terms

1.The term of service

Shenzhen SuangMuSanLin Electronics Co.,LTD promise good quality products. If product is defective unit by normal use within 7 days after purchasing. The customer can chose to return or repair warranty (does not affect the secondary sales after they can return). Faulty for free within one year warranty normal use.

2.Date of purchase is in accordance with invoice date or receipt date is uesd by seller,on line shopping can cut trade shots.

3.Following situation can not enjoy'Three Guarantees'service:

- All damages by human factors, including use it under non-normal working environment the and not follow manual in structions.
- User privately disassemble, modification, maintenance;
- Use non-designated or approved accessories cause damage;
- QC warranty stickers damage on cabinet;
- Can not provide avalid purchasing prove;
- Not belong to SMSL products.

4.How to warranty

This terms only suitable for China mainland, other region please refer to the policy of the local sales agents and national.

Shenzhen Shuangmusanlin Electronics Co., Ltd.
Address: 8th Floor B6 Building JunFeng Industrial Park, Fuyong town, BaoAn District Shenzhen, China
Tel: +86-755-27444178
http://www.smsl-audio.com/