NUX
Verdugo Series

Owner's Manual
使用手册

duotime
Dual Delay Engine
双延迟运算引擎

NDD-6

WARNING!-IMPORTANT SAFETY INSTRUCTIONS
BEFORE CONNECTING, READ INSTRUCTIONS

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

CAUTION: To reduce the risk of fire or electric shock, do not remove screws. No user-serviceable parts inside. Refer servicing to qualified service personnel.

CAUTION: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The lightning symbol within a triangle means "electrical caution!" It indicates the presence of information about operating voltage and potential risks of electrical shock.

The exclamation point within a triangle means "caution!" Please read the information next to all caution signs.

1. Use only the supplied power supply or power cord. If you are not sure of the type of power available, consult your dealer.

2. Do not place near heat sources, such as radiators, heat registers, or appliances which produce heat.

3. Guard against objects or liquids entering the enclosure.

4. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

5. Servicing is required when the apparatus has been damaged in any way, such as when   the 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.

6. The power supply cord should be unplugged when the unit is to be unused for long periods of time.

7. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and at the point where they exit from the apparatus.

8. Prolonged listening at high volume levels may cause irreparable hearing loss and/or damage. Always be sure to practice "safe listening".

Follow all instructions and heed all warnings
KEEP THESE INSTRUCTIONS!

Duotime is a real stereo delay pedal with independent time / sub-division & repeat knobs. In the 80's, all of the professional musicians used rack-mount effects to run stereo delay. It was the golden era of legendary engineering like Lexicon Delta, TC 2290, Eventide H3000, and more. When we talked to "working musicians" we found that they were looking for a great stereo delay with a compact size and ultra-simple controls. So we discussed the absolute essential requirements and developed the duotime Dual Delay Engine. It's ultra-musical, and easy to operate. So, let's dive-in and experience the most versatile delay pedal ever:

Duotime offers analog delay, tape echo, digital delay, modulation delay, and verb delay.

● Analog Delay (40ms~402ms) is based on the bucket-brigade device (BBD), discrete-time analog delay. The PARAMETER tweaks your modulation depth. When LEVEL and REPEAT are at maximum, turn down the TIME knob to zero, and experience the natural infinite feedback of the old school BBD delay.

● Tape Echo (55ms~552ms) is based on RE-201 Tape Echo algorithm with NUX Core Image Technology. Use the PARAMETER to tweak the saturation, and feel the distorted sound decay. Just like the real tape echo machine, when you adjust LEVEL and REPEAT to maximum, try adjusting the TIME knob down to zero, and you will have infinite feedback and pitch shift flange.

● Digi Delay (80ms~1000ms) is based on the modern digital delay algorithm with magic compression and filter. After reviewing decades of delay algorithm evolution, we noticed musicians were not satisfied with the mathematical digital delay sound. So we added a bit of non-digital flavour—inspired by Strymon® and Neunaber® making the sound much more musical. PARAMETER controls the hardness of the repeat signals, so you can feel the unique compressed filter.

● Mod. Delay (20ms~1499ms) is based on the Ibanez DML algorithm; a weird and wonderful modulation delay. It was released in the 80's with experimental nature. We selected the most wonderful aspects highlighting the musical time sync modulation rate, offering a simple, seamless romantic tone.

● Verb. Delay (80ms~1000ms) is the way to make your delay sound 3 dimensional. Similar to our Atlantic Delay & Reverb, we added Shimmer into the Plate reverb algorithm. It became the iconic sound of our NUX reverb. Inspired by Kit Tang, the famous Hong Kong studio guitarist, Jamtrackcentral® artist, a master of different reverb parallels with different frequency bands to add to his effect yielding an authentic 3 dimensional sound, we combined parallel digital delay, plate reverb, and various filter shimmers to offer you an unmatched sacred atmosphere to explore.

All the brand and model names mentioned are Trademarks of their respective owners, which are in no way associated or affiliated with NUX and Cherub Technology CO. LTD.

Using Tap Tempo, the longest delay time can reach 1800ms with all delay styles.

Features
● Up to 1800ms stereo delay time by Tap Tempo
● 5 Delay types: Analog Delay / Tape Echo / Digi Delay / Mod Delay / Verb Delay
● True stereo delay engine with independent controls in a compact size
● Realistic infinite pitch-shift feedback in Analog and Tape modes
● Sub-division time signature with Tap Tempo foot switch
● 40 seconds stereo phrase loop with OLED status display
● Optional delay time display (MS/BPM)
● Musical time sync modulation rate in Analog and Modulation delay
● Pioneer 3 dimensional feeling Verb. delay

Control Panel

LEVEL knob

DELAY TYPE knob

TIME 1 knob

REPEAT 1 knob

ON LED indicator

ON footswitch

OLED display

PARAMETER knob

REPEAT 2 knob

TIME 2 knob

TAP LED indicator

TAP footswitch

LEVEL knob

Controls the delay mix level. When using LOOP mode, it controls phrase loop volume.

DELAY TYPE knob

This is a 5-way rotary switch. You can choose the delay type as ANALOG, TAPE, DIGI, MOD., or VERB.

OLED display

Shows current delay type, and delay time in MS/BPM.

PARAMETER knob

ANALOG	TAPE	DIGI	MOD D	VERB D
M.DEPTH	SATURATION	HARDNESS	M.DEPTH	VERB LEVEL

For Analog Delay, PARAMETER controls Modulation Depth. Increase to get wider modulated sound.

For Tape Echo, PARAMETER controls signal Saturation. Increase to get more saturated and distorted sound.

For Digi Delay, PARAMETER controls signal Hardness. Increase to get a more compressed and brighter sound.

For Mod Delay, PARAMETER controls Modulation Depth. Increase to get a wider modulated sound.

For Verb Delay, PARAMETER controls Reverb and Shimmer Mix Level. Increase to get more depth and a 3 dimensional feeling.

Control Panel

TIME 1 knob

Controls delay1's delay time. When in Tap Tempo, it becomes a sub-division according to current parameter.

REPEAT 1 knob

Controls delay1's number of repeats.

TIME 2 knob

Controls delay2's delay time. When in Tap Tempo, it becomes a sub-division according to current parameter.
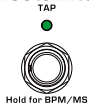
REPEAT 2 knob

Controls delay2's number of repeats.

ON footswitch

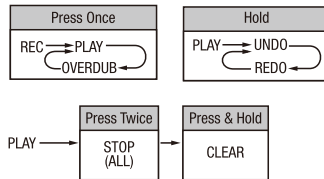Engages the delay effect.
When using LOOP mode, it controls REC/PLAY/DUB.

TAP footswitch

Tap this foot switch to adjust the speed and delay sub-division. You can set the target sub-division by TIME 1 and TIME 2 knobs, then TAP this foot switch to adjust the speed, the DELAY 1 and DELAY 2 will change the delay time according to the current sub-division note signature. Hold this foot switch for 2 seconds, to switch current delay time between MS or BPM.

LOOP mode

Press ON and TAP foot switches simultaneously, to enter / quit PHRASE LOOP mode. In LOOP mode, press ON foot switch to activate REC/PLAY/DUB and hold to UNDO/REDO as a normal looper pedal. OLED display shows your phrase loop status. LEVEL knob becomes LOOP LEVEL to adjust phrase loop volume. (Pedal will remember the current delay mix level when you enter LOOP mode.) All other knobs work in normal mode independently.
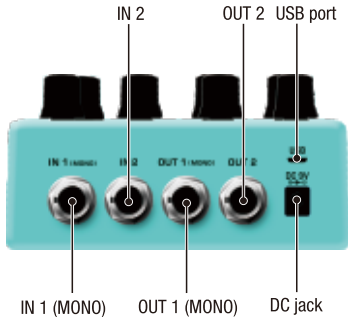
LOOP FOOTSWITCH

Press Once		Hold	
REC → PLAY → OVERDUB ↺		PLAY → UNDO → REDO ↺	

	Press Twice	Press & Hold
PLAY →	STOP (ALL)	CLEAR

Duotime offers 40 seconds real stereo phrase loop.

When playing phrase loop, if you quit LOOP mode, the phrase loop will continue playing. Now all knobs work in normal mode. OLED display shows delay type and delay time. LEVEL knob reverts back to the role of controlling delay mix level. (Pedal will remember the current LOOP LEVEL when you quit.)

IN 2   OUT 2   USB port

IN 1 (MONO)   OUT 1 (MONO)   DC jack

IN 1 (MONO)

IN 1 (MONO)

If you only connect with IN 1, then IN 1 signal will run DELAY 1 related to TIME 1 and REPEAT 1 knobs for OUT 1. Pedal will copy IN 1 signal to run DELAY 2 related to TIME 2 and REPEAT 2 knobs for OUT 2.

If you connect with IN 1 and IN 2, then IN 1 and IN 2 will run DELAY 1 for OUT 1 and DELAY 2 for OUT 2 separately.
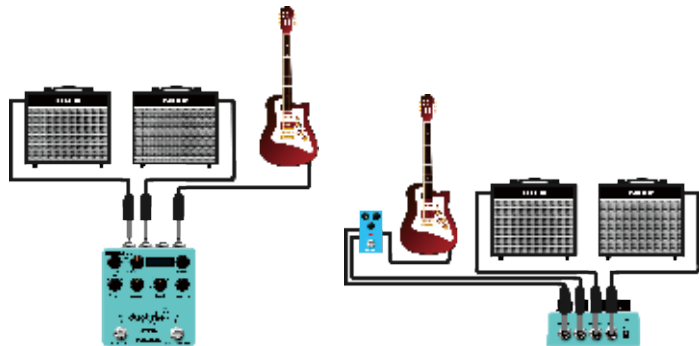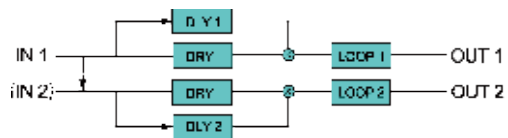
IN 2

IN 2

If you only connect with IN 2, then IN 2 signal will run DELAY 2 related to TIME 2 and REPEAT 2 knobs for OUT 2. Pedal will copy IN 2 signal to run DELAY 1 related to TIME 1 and REPEAT 1 knobs for OUT 1.

If you connect with IN 1 and IN 2, then IN 1 and IN 2 will run DELAY 1 for OUT 1 and DELAY 2 for OUT 2 separately.

OUT 1 (MONO)

OUT 1 (MONO)

OUT 1 signal is related to DELAY 1.

OUT 2

OUT 2

OUT 2 signal is related to DELAY 2.

USB port

USB

You can update firmware through the USB port.

DC jack
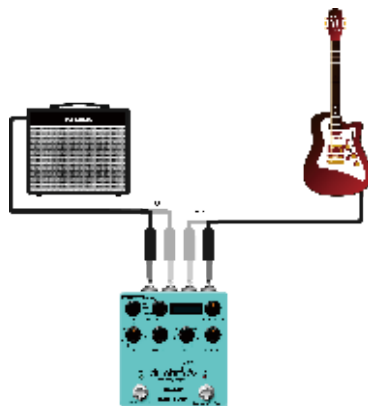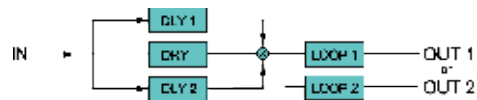
DC 9V

Use ONLY: 9V Negative Tip power with 300mA ⊕–◖–⊖ .

Connection Options

1. Stereo Out, either Mono In or Stereo In
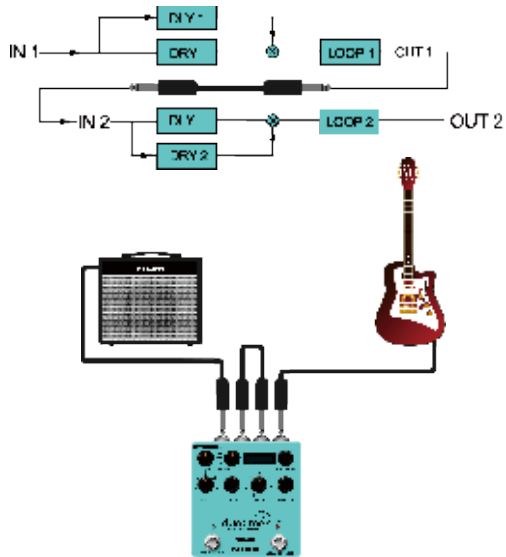
2. Mono Out: Dly 1 or Dly 2

Connection Options

3. Dly 1 to Dly 2 by a cable

Specifications

●Sampling Rate: 48kHz
●A/D Converter: 32bit
●Signal Processing: 32bit
●Frequency Response: 20Hz~20kHz
●Input Impedance: 5MΩ
●System Latency: 1ms
●Output Impedance: 1kΩ
●Dynamic Range: 102dB
●Power: 9V DC(Negative tip, Optional ACD-006A adapter)
●Current Draw: <150mA
●Dimensions: 105mm(L)X115mm(W)X58mm(H)
●Weight: 440g

Accessories: User manual, Warranty card

*Specifications and features are subject to change without notice.

www.nuxefx.com   Made in China

产品简介

Duotime是一款带独立Time/Sub-division及Repeat调节的真立体声延迟效果器。80年代所有专业乐手都使用机架效果器来获得立体声延迟效果，那是一个属于Lexicon Delta、TC2290、Eventide H3000等传奇产品的黄金年代。在与当代职业乐手们的交流过程中，我们发现他们一直在寻找一款音色出众、操作简单、小巧便携的立体声延迟效果器，NUX Duotime Dual Delay Engine便应运而生了。

Duotime内置了五种延迟模式：模拟延迟（ANALOG），磁带延迟（TAPE）、数字延迟（DIGI）、调制延迟（MOD）以及混响延迟（VERB）。

● **模拟延迟（40毫秒～402毫秒）**
基于BBD芯片的模拟延迟效果。PARAMETER旋钮控制调制深度。当LEVEL及REPEAT旋钮置于最大位置同时将TIME旋钮归零时，您便可以体验到经典BBD自然延迟的无限反馈。

● **磁带延迟（55毫秒～552毫秒）**
基于NUX Core Image技术建模的Roland RE-201 Tape Echo延迟效果。使用PARAMETER旋钮来调整饱和度，感受失真音色的衰减。当LEVEL及REPEAT旋钮置于最大位置同时将TIME旋钮归零时，您便可以获得如同原型机一般的无限反馈及由音高变化的镶边音色。

● **数字延迟**（80毫秒～1000毫秒）
巧妙融合了压缩及滤波算法的现代数字延迟效果。在回顾了数十年的延迟效果算法发展历程后，我们发现乐手们对于过于公式化的数字延迟并不满意，所以受Strymon®和Neunaber®的启发，我们给Duotime的延迟注入了非"数字"化元素，使得其延迟效果更具音乐性。
PARAMETER旋钮控制重复（延迟）信号的强度，转动此旋钮来感受其独特的压缩和滤波。

产品简介

●调制延迟（20毫秒～1499毫秒）

基于发布于80年代的Ibanez DML——一款怪异而奇妙的调制延迟效果器开发。我们取其精华并凸显了调制速率与延迟时间同步，从而提供一种简单无缝且浪漫的音色。

●混响延迟（80毫秒～1000毫秒）

让音色三维化的一种混响延迟。类似于NUX Atlantic Delay & Reverb（亚特兰提克），我们在平板混响算法中加入了Shimmer效果，这也成为NUX混响的标志性特征。受香港著名录音室吉他演奏家Kit Tang（Jamtrackcentral®艺术家）的启发，他熟练使用具有不同频段的不同混响并行技术，以产生真实的3D声音。所以我们结合了并行数字延迟、平板混响以及带有多种滤波的Shimmer，这将使您体验到无与伦比的声效氛围。

产品特点

- 1800ms立体声延时(通过Tap Tempo可达最大时长)
- 五种延迟模式：ANALOG, TAPE, DIGI, MOD, VERB
- 独立Time/Sub-division及Repeat调节的真立体声延迟效果
- 40秒立体声录音循环功能

- LEVEL旋钮
- 延迟模式选择旋钮
- TIME 1旋钮
- REPEAT 1 旋钮
- OLED显示屏
- PARAMETER 旋钮
- REPEAT 2 旋钮
- TIME 2旋钮
- ON LED 指示灯
- ON踩钉
- TAP LED 指示灯
- TAP踩钉

控制面板

LEVEL旋钮

LOOP LEVEL

LEVEL

调节延迟效果干湿比。
LOOP模式下，调节循环乐句音量。

延迟模式选择旋钮

VERB
MOD.
DIGI
TAPE
ANALOG

转动此旋钮来选择一种延迟模式，包括：模拟延迟(ANALOG)，磁带延迟(TAPE)、数字延迟(DIGI)、调制延迟(MOD)以及混响延迟(VERB)。

OLED显示屏

显示当前延迟类型和延迟时间(MS/BPM)。

PARAMETER旋钮

PARAMETER

ANALOG	TAPE	DIGI	MOD D	VERB D
调制深度	信号饱和度	信号硬度	调制深度	混合比

不同模式下该旋钮的功能不同。
模拟延迟模式下，PARAMETER旋钮控制调制深度。

磁带延迟模式下，PARAMETER旋钮控制信号饱和度。调大可以获得更饱和和失真的音色。

数字延迟模式下，PARAMETER旋钮控制信号硬度，调大可以获得更为明亮的音色。

调制延迟模式下，PARAMETER旋钮控制调制的深度，调大可以获得更宽的调制音色。

混响延迟模式下，PARAMETER旋钮控制混响和Shimmer效果的混合比，调大可以使音色更深邃和更具立体感。

TIME 1旋钮

TIME 1

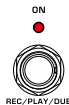控制DELAY1的延迟时间。当打点设速激活时，此旋钮可以根据当前参数选择细分音符拍长。

REPEAT 1旋钮

REPEAT 1

控制DELAY1的重复次数。

TIME 2旋钮

TIME 2

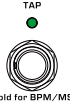控制DELAY2的延迟时间。当打点设速激活时，此旋钮可以根据当前参数选择细分音符拍长。

REPEAT 2旋钮

REPEAT 2

控制DELAY2的重复次数。

ON踩钉

ON

REC/PLAY/DUB

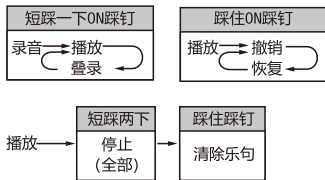开启/关闭延迟效果，当LOOP模式激活时，此踩钉可以控制录音/播放/叠加录音。

TAP踩钉

TAP

Hold for BPM/MS

拍点该踩钉来决定延迟速度及延迟的对应拍点音符。您可以通过TIME1和TIME2旋钮设置预期的音符，然后拍点该踩钉来定速，此时延迟1跟延迟2会根据当前设置的音符来改变对应速度。长按住该踩钉两秒钟可将显示屏的延迟时长单位显示切换为MS或BPM。

控制面板

LOOP模式

同时踩下ON踩钉和TAP踩钉以激活或关闭LOOP模式。LOOP模式下可使用ON踩钉来进行录音/播放/叠加录音操作，踩住ON踩钉可以进行撤销/恢复最近一次录音。OLED显示屏会显示LOOP状态，LEVEL旋钮可以用于调整循环乐句回放的音量大小（机器会自动保存进入LOOP模式前的延迟混合比）。其余旋钮的功能与普通模式下保持一致。

在循环乐句播放的时候，如果您选择退出LOOP模式，循环乐句会继续播放，所有旋钮恢复正常工作模式的功能，OLED显示屏会显示延迟类型与延迟时间。LEVEL旋钮恢复控制延迟混合比功能（机器会自动保存当前LOOP回放的音量大小设置）。

短踩一下ON踩钉	踩住ON踩钉
录音 → 播放 ⟲ 叠录	播放 → 撤销 ⟲ 恢复

	短踩两下	踩住踩钉
播放 →	停止（全部） →	清除乐句

*Duotime的loop最长可提供40s的录音时间。

I/O接口

IN 2 输入接口　　OUT 2 输出接口　　USB接口

IN 1 输入接口（单声道）　　OUT 1 输出接口（单声道）　　电源接口

I/O接口

IN 1输入接口（单声道）

IN 1 (MONO)

如果输入（单声道）信号仅接入IN1，从IN1接口的输入信号（DELAY1）会经由TIME1旋钮及REPEAT1旋钮的控制由OUT1接口输出，同时机器会复制从IN 1输入的信号（DELAY2），经由TIME2旋钮及REPEAT2旋钮的控制由OUT2输出信号。

如果输入（立体声）信号同时接入IN1与IN2，那么IN1与IN2会分别受控然后分别经由OUT1及OUT2输出。

IN 2 输入接口

IN2

如果输入信号仅接入IN2，从IN2接口的输入信号（DELAY2）会经由TIME2旋钮及REPEAT2旋钮的控制由OUT2接口输出，同时机器会复制从IN2输入的信号（DELAY1），经由TIME1旋钮及REPEAT1旋钮的控制由OUT1输出信号。

如果输入（立体声）信号同时接入IN1与IN2，IN1与IN2会分别受控，然后分别经由OUT1及OUT2 输出。

OUT 1输出接口（单声道）

OUT 1 (MONO)

OUT1输出DELAY1的信号。

OUT 2输出接口

OUT 2

OUT2输出DELAY2的信号。

USB接口

USB
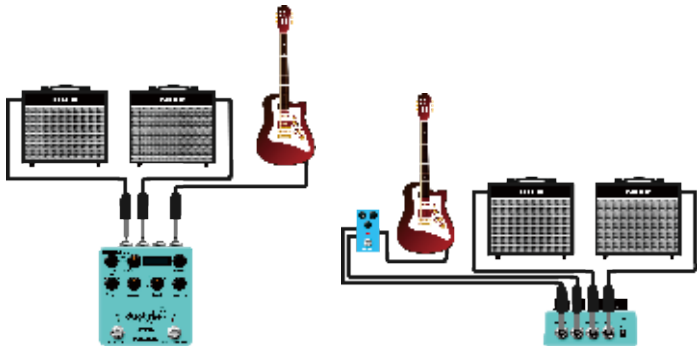
Micro-USB接口，可连接电脑升级机器的固件。请至NUX官方网站获取最新固件及更新方法。

电源接口
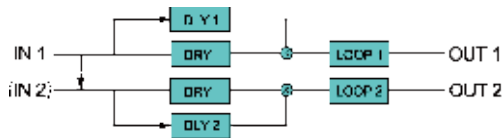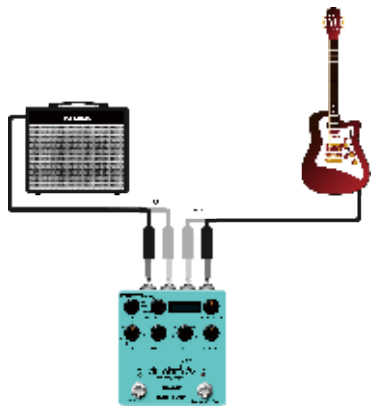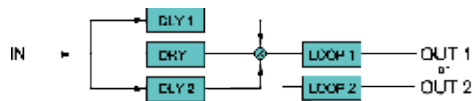
DC 9V

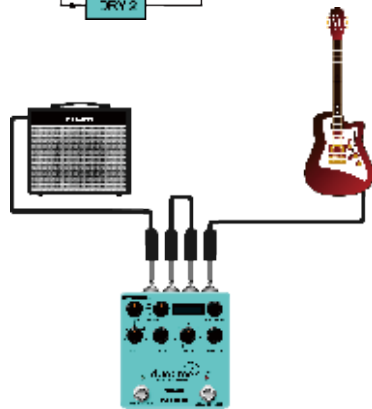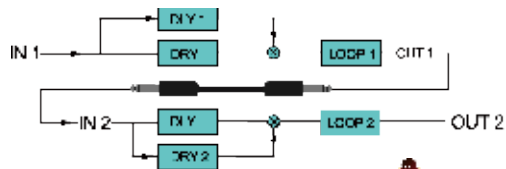请使用品质可靠的内负外正9V效果器专用电源。推荐使用NUX ACD-006A。

连接方法

1.立体声输出（单声道或立体声输入）

2.DELAY1或DELAY2单声道输出

3.DELAY1至DELAY2串联输出

技术规格

- 采样率：48kHz
- 模数转换：32bit
- 信号处理精度：32bit
- 频率响应范围：20Hz~20kHz
- 输入阻抗：5MΩ
- 系统延迟：1ms
- 输出阻抗：1kΩ
- 动态范围：102dB
- 电源：9V直流（内负外正，推荐选用ACD-006A）
- 消耗电流：<150mA
- 产品尺寸：105mm(长) x 115mm(宽) x 58mm(高)
- 产品重量：440g

随机附件：使用说明书、保修卡。

*技术规格如有变更，恕不另行通知。

有关产品中所含有害物质的说明

为了控制和减少电器电子产品废弃后对环境造成的污染，本资料就本公司产品中所含的特定有害物质及其安全性予以说明。
本资料适用于2016年7月1号以后本公司所制造的产品。

环保使用期限

此标志适用于在中国国内销售的电子信息产品，表示环保使用期限的年数。所谓环保使用期限是指在制造日起的规定期限内，产品中所含的有害物质不致引起环境污染，不会对人身、财产造成严重的不良影响。环保使用期限仅在遵照产品使用说明，正确使用产品的条件下才有效。不当的使用，将会导致有害物质泄漏的危险。

产品中有害物质的名称及含量

部件名称		有害物质					
		铅(Pb)	汞(Hg)	镉(Cd)	六价铬(Cr(VI))	多溴联苯(PBB)	多溴二苯醚(PBDE)
主体	塑胶件	○	○	○	○	○	○
	五金件	×	○	○	○	○	○
	硅胶件	○	○	○	○	○	○
	内置电路板	×	○	○	○	○	○
附件	*交流电源适配器、线缆	×	○	○	○	○	○
*表示某些产品可能不含有这些项目，上表当中的信息仅在产品含有这些项目时适用。							

本表格依据SJ/T 11364的规定编制。

○：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。

×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求，但根据现有的技术水平，还没有什么物质能够代替它。

保护环境
如果需要废弃本产品，请遵循本地相关指引，请勿随意丢弃或作为生活垃圾处理，以避免对环境造成污染。

质量承诺

亲爱的 **NUX** 用户：

在您使用 **NUX** 产品时，请仔细参阅产品说明书，当您有疑问和困难时，请拨打售后服务热线：

400-990-9866

■ 一周内出现质量问题可退货退款　■ 一年内出现质量问题可免费维修

■ 一月内出现质量问题可调换　　　■ 终身享有咨询和维修服务

[请向销售商索取正规发票并予以保存]

换修政策

一、包换政策：

　　1、消费者通过正规授权渠道购买的产品，自购机之日起1个月之内，在正常使用情况下出现非人为的产品性能故障、且产品外观及包装保持完好，可向所购机的经销商换机。

　　2、消费者在换机时应出示由经销商开出的购机凭证，否则经销商可以不予更换。

二、保修政策：

　　1、消费者通过正规授权渠道购买的产品(以发票所示销售方为准)，自购买之日起1年内，若出现非人为损坏的性能故障，可享有免费维修服务。

　　2、对于超过1年或人为及不可抗力因素造成损坏的产品，我司可提供有偿维修服务。

*本售后政策仅适用于中国大陆地区，其它国家及地区以当地售后政策及法律法规为准。

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合 格 证
Certificate

检验员 Inspector	名 称　双延迟运算引擎 Name
	型 号　**NDD-6** Type
生产日期 Date	本产品经检验合格 This product is inspected and approved.
	执行标准: Q/WKDZ 001-2020 Product is certificated with Q/WKDZ 001-2020