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# **DUO**

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**SUTHERLAND**



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What if all the price constraints in the 20/20 were removed? Enter the **DUO**.

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— RON SUTHERLAND

The **DUO** is derived from the cost-optimized 20/20. The 20/20 was designed to get the most performance possible at its predetermined price point. To get there, extra was spent to get premium parts and circuitry into the signal path. Consequently, some expenses were squeezed out of less important areas. Those trade-offs have worked very well. The 20/20 has delivered an extremely high level of performance at a reasonable price. It is an incredible performance value.

***But what if all the price constraints in the 20/20 were lifted?*** The price goes up, the performance goes up.

The opportunity for upgrade is focused on a more refined power supply, improved circuit board properties and dual chassis construction.

Enter the **DUO**...



# — Power Considerations —

The 20/20 uses external, bench-top power supplies. They are cost effective, reliable and offer good performance. Each supply's output is extensively filtered and regulated into one +/- 15 volt source for both of the gain stages.

Each **DUO** has a built in AC power supply. There is an IEC power inlet on each chassis to accommodate the user's personal power cord choice. The shielded power supply module has one output. That output is split into two branches. One for each of the two gain stages. Each of those branches is independently filtered and regulated to provide a substantial foundation for the gain stages.



## **— Parts Quality —**

FR-4 fiberglass circuit boards, Double-sided with plated thru holes

Dale/Vishay 1% metal film resistors

Wima Polypropylene capacitors for power supply by passing

Vishay polypropylene film capacitors for equalization

14 gauge cold-rolled steel base

Baked epoxy powder coat finish

1/2"-thick anodized aluminum panel

Anodized in front panel artwork

Gold-plated, Teflon insulated RCA connectors

Gold-plated configuration headers and shunts



# — LINKING INTO YOUR SYSTEM —



## Initial Set Up

Release the top cover by removing the four knurled screws. Audio boards are located on the right side of the enclosure. On the left side of each circuit board you will find headers for receiving the plug-in configuration shunts. Legends printed on the circuit board clearly indicate position and function.

## Load Settings

47k Ohms

1k Ohms

475 Ohms

**200 Ohms (factory setting)**

100 Ohms

## Gain Settings

64 dB

**58 dB (factory setting)**

52 dB

46 dB

40 dB



**Make sure that loading and gain options are set so that each chassis has identical settings.**



**A DUO consists of two matching units. Below dimensions and voltage requirements are indicated PER UNIT. A DUO package consists of 2 UNITS.**

### **Size / Unit**

17" wide  
12" deep  
2.5" high

### **Shipping Box / Unit**

23" wide  
18" deep  
9" high

### **Contact Info**

**Sutherland Engineering, Inc.**  
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Kansas City, MO 64131  
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Email: [ron@sutherlandengineering.com](mailto:ron@sutherlandengineering.com)  
Website: [www.sutherlandengineering.com](http://www.sutherlandengineering.com)

### **Weight / Unit**

Unit Weight: 11 lbs  
Shipping Weight: 19 lbs

### **Operating Voltage Requirements / Unit**

86 – 260 VAC, 5 Watts  
Universal, no adjustment required  
*\*LPS configuration option is NOT universal*

### **Warranty**

5 years parts and labor. Transferable. Only valid for units that have not been modified or abused.

# — OPTIONAL LPS CONFIGURATION —

## An Optional Internal Upgrade

The DUO can also be ordered with an optional internal Linear Power Supply board.

This LPS circuit board has a toroidal power transformer followed by rectification and extensive low-pass filtering. A cascade of passive R-C filtering provides extensive and effective isolation of the audio circuit from any noise or disturbance on the incoming AC power line.

The LPS circuit board is a popular option that adds a more refined musicality with a more solid foundation for dynamic expression.

## Operating Voltage Requirements for LPS Configuration

105 — 125 VAC, 10 Watts

210 — 250 VAC, 10 Watt units are available on special order

*Please Note: operating voltage is NOT universal and cannot be field modified*

