Bricasti Design

M20 Dual Mono Pre-Amplifier

User Guide

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M20 True Balanced Dual Mono Pre-Amplifier

Design Criteria

The M20 is a fully differential dual mono preamp. It features 3 inputs; 2 balanced and one unbalanced, and 3 outputs; 2 balanced and 1 unbalanced.

Each input path has a separate input buffer circuit for complete isolation between the balanced and unbalanced sources and to allow for different gain of each input type. The input stage buffers feature high speed low noise fast settling Analog Devices operational amps.

The attenuator is a discreet ladder of resistors digitally controlled with 60 resistors per phase, followed by very high slew rate fast settling Analog Devices op-amps in the attenuator output stage buffers, the final output buffers are a proprietary discreet design. Vishay foil resistors are used in key locations in the circuit; we find them to have a unique sound so we employed them to impart a tonal character to the M20, and PCB material is made from ceramic materials with excellent dialectic properties. Level control is in 1db steps and is accomplished using a R2R ladder technique allowing for perfect balance and tonal character at any level with recall, programmable input offset and remote control capabilities. All signal switching and hard output mutes are done using logic controlled relays.

There are 3 separately buffered analog outputs, 2 balanced one unbalanced. The output buffers are our own discreet design that is based on our other products like the M1, M12 and M21. With 3 separately buffered outputs the M20 should be ideal for bi amp applications with 2 balanced outs to drive 2 power amps or running 2 or 3 zones.

The M20 powered by 3 linear power supplies, one for each of the analog sections and separate supply for the digital control circuit processor to insure isolation from the analog PCB and power supplies. So in this way the M20 is a full Class A design.

The M20 has a modest amount of gain of 3db, we felt that most sources have enough level and the majority of the application for a product like this and modern power amps have high impedance inputs and do no present a load to the outputs.

The M20 comes complete with Stillpoints isolator feet, is available in our Classic finish of anodized black and clear aluminum or in the Platinum Series with chrome front and brass fittings.

Operational Guide

Input: Selects one of the 3 inputs. # 1 and 2 are balanced and # 3 is the RCA.

Naming the inputs:
The inputs can be renamed by pressing a long press on the input key on the front panel. This will bring up a menu you can scroll through with some common names, M1, M21, M3, phono, CD, DAC. Once you have found one you like press the Input key again and it will set the name for that input.

Level offset adjustment:
Pressing a second long press on the input key (2 long presses) that is selected will allow for setting a trim offset for that input to match it to other inputs, after setting the level difference + or – in db. press input to set and return to input select mode.

Status: In this menu you can change the display brightness, view version and temp monitor.

Level: This is for setting the level of the main output attenuator of 90db in 1 db steps from 0 to -89 db. This will be recalled to the last given state when power is cycled on/off.

Balance: Left or Right attenuation offset. Each change is in .5db steps

Reference: For setting a favorite preset level of the main attenuator for reference use.

Mute: Overall mute to all outputs.

Tigger out: The trigger out mini jack on the rear can be connected to the our power amps like the M28s or DACs like the M21 to send a 5V DC voltage trigger to power them in and out of standby from power off or standby on the M20.

Remote: The M20 is supplied with an IR remote that controls all normal functions of the M20.

Specs

THD+N :	0.0007% 20-20k typical	
Max input level:	+20 dbu	Balanced
Max out level:	+23 dbu	Balanced
	+16 dbu	Unbalanced
Input impedance:	200k ohm	
Crosstalk:	> 120db	
Trigger out:	TRS mini jack, 5V ring, ground tip	
Attenuator:	90 db in 1 db steps from 0 to -89db.	