Hybrid Integrated Amplifier ACRH-1.2

The ACRH1.2 is an integrated and complete stereo amplification and preamplification system. It offers the features of a high-end unit designed in a user-friendly, convenient, easy to use system. Its tube-based preamplifier offers outstanding detail in sound and scope. This, along with its semiconductor output stage, creates a musically dazzling performance.
It is well known that a good preamplifier is the heart of a sound system. With this in mind, Margules Audio fronted challenge of developing a hybrid integrated amplifier combining an extraordinary tube preamplifier with excellent solid state amplifier.

Description:

Preamplifier
The preamp section of the unit is based on two dual triodes (12AU7) per side that acts as coupling circuit from the signal source to the power amplifier. The circuit is based on the knowledge and experience gained in the development of the acclaimed Margules SF220 line stage.
This topology allows the frequency response to be further wider than the audio bandwidth, maintaining the fase and amplitude constant with a very low distortion together with an extremely fast transient response.

High Voltage Power supply
The Bias power supply of the preamplifier is fully regulated. Good regulation reduces the loss of signal integrity.
The filament supply is also regulated and has active damping control to avoid noise and microphonics.

Remote operation
The remote control is unusually versatile. Besides the input selection, volume, power on and off
You will also be capable of switching the AC power any associated equipment having load up to 15
amps (1800 watts). Additionally switching control can be accomplished by means of the RS232 connection or with an external web server(optional)

All switching is made by mechanical high quality relays avoiding the audio signal to go through semiconductor device, thus ensuring maximum signal purity.

Amplifier Section
The totally discrete semiconductor amplifier has Direct coupling topology, designed so that the entire interstage is direct, avoiding capacitors , results faster transient and lower distortion.
The output stage bias is designed with a proprietary circuit optimizes the operating point of the semiconductor to avoid the typical overheating found in other designs Class A while avoiding the problems of distortion in Class B.
The innovative design of ACRH-1.2 complements metal film resistors and printed circuit silver coating.

Connections:
All inputs and outputs of the preamplifier are unbalanced RCA connectors.
The back panel is organized by blocks from left to right: the first RCA block contains the inlets to the amplifier, the second is for the preamp, the third has four inputs, which have the same gain and impedance; and the fourth section is direct avoiding the volume control, so you can use the ACRH together with a 5 channel preamplifier for a high end multichannel. It can also be used as an input and output circuit for a processor.
The phono preamplifier is external and is not included.
The preamplifier has two outputs per channel, they are connected in parallel.
One will be connected to the amplifier input, completing the integrated system. The other is available to connect an active subwoofer or perhaps an adapter multi-room extension or surround system.
To wire the speakers, connect the 5 ways binding post of the amplifier terminals to corresponding speaker, use a good cable with a 12 gage or more, it is recommendable to avoid long runs, less than 10 meters.
Connect the speakers red to the red and the black to the black, it is VERY important to avoid any short circuit, this will lower the life expectancy of the ACRH.
The output stage has big current capability and it is protected by fuses, if a fuse blows, it might be because the ACRH was overdriven or the speaker cable has a short circuit.
Check for proper connections before turning the ACRH on.
The minimum loudspeaker impedance is 4 Ohms, avoid paralleling speakers that can lower the speakers below this recommended impedance.
When the power line is connected to the ac wall outlet the filaments of the tubes and the remote control receiver will be turned on.
The filament will be on as long as the AC is connected, so the unit will be in standby mode, and can be turned on and use immediately, also the life expectancy of the tubes will be longer.
Avoid turning the unit on immediately after you connect the ACRH to the wall outlet, let it warm the filaments for a couple of minutes.

Operation:

When your ARCH 1.2 is plugged for first time, or when the current wall is absent for a few seconds, it is good to allow the tube filaments to be preheated for 2 minutes, verify that the volume is at a low level to avoid a blow sudden sound can damage your speakers.

Turn on your ACRH 1.2 with the on /off switch in the remote or the front panel. This will activate a blue light in the upper left corner indicating that the unit is active, now the high voltage in the preamplifier and power amplifiers are operational.

To select the input source press the selector switch in the front panel or at the remote control, the red light on the front panel indicates the selected source.

To turn on or off the unit presses the power switch on the front panel or the remote control.

The filaments are always on, so the ACRH is instantly operative. Tube life expectancy increases if the instructions are followed.

The ACRH has an AC outlet for associated equipment interrupted with a capacity of 15 amps, so you can control the switching on and off of associated components by the remote control.

Troubleshooting:

There is no sound:
- Verify the connections
- Make sure the unit is turned on verifying the on light.
- Verify that the input signal is connected in the correct input.
- Verify that the source is working properly.

One channel has no output
- Verify the connections
- Verify the jumper from the preamp to the Amp.
- Verify that the source is working properly.
- Check the output fuses

General Comments:

The unit is always warm, so that should be placed in well ventilated area.

Always place the unit on a firm platform to avoid external vibrations.

You can alter the tonal characteristics by placing the unit in different types of surfaces such as feet, spikes etc.'

Cables

The cabling quality changes the tonal characteristic of the ACRH, so choosing proper ones will let bloom its characteristics.

To minimize unwanted noise in the system:

Avoid excessive in long interconnect cables.

Avoid having signal cables near the AC. power line

Avoid ground loops between components, only one physical ground should be used

Breaking in period:

150 hours of music playback are required. Having the lit without music unit does not work for a proper seating.

TubesLife Expectancy:

For optimum performance we recommend changing both tubes every three to four years, even if should last for longer period.

The unit has 12AU7 or 12AT7 tubes but these can be exchanged with 12AX7 or similar ones without
any adjustment.

Never remove the tubes from the circuit while the ACRH is connected to the wall.

Specification

Integrated:	Frequency Response 10-50 KHZ
Power at 8 Ohms	100w. / Channel
Total noise	<0.3mV.
THD	.03%
Weight	15KG.
Consumption:	Stand Buy 17 W.
At maximum power at 8 ohms.	380W
Preamplifier:	
Frequency Response	4-80KHZ
Noise	<0.1mV
Gain	1DB
Harmonic distortion	0.02%
Amplifier:	
Input voltage for maximum power	0.8V
Frequency Response	10-50KHZ
Noise	<0.2mV
Harmonic distortion	0.02%

ACRH-2.3

Hybrid Integrated
Amplifier

User Manual