AG1.0

The PURR (PickUp Resonance Rescue)

1. Preface

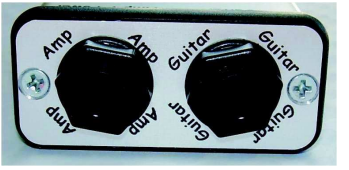
The magnetic pickup of a guitar / bass and the cable to the amplifier form a tuned circuit, due to their inductance and capacitance.
It's resonance frequency is significantly determined by the capacitance of the possibly very long cable. Different cables (quality / length) cause a different position of the resonance and a significant change in the sound of the instrument.

The AG1.0 is a buffer / amplifier which electrically decouples the pickup of the instrument from the cable to the amplifier. The cable itself has no longer influence on the resonance.

By means of switchable capacitances in the input of the AG1.0, the position of the resonance can now be adjusted to personal taste. In addition, a gain of up to 4x (+12dB) can be set for the input signal.
The volume pot of the guitar gets a new quality, too. Normally, a dimmed pot in conjunction with the capacitance of the cable forms a low-pass filter, which cuts off a large portion of the heights.
The AG1.0 prevents this.

Preferably, the AG1.0 is attached to the lower end of the guitar strap, near the output terminal of the guitar. It can be fixed, for example, with the enclosed hook-and-loop tapes and / or duct tape.

2. Connections



2.1 "Guitar"
Instrument input
Connect the instrument here, using a preferably short (low capacitance) cable. The input of the *AG*1.0 itself is high-impedance and hardly affects the natural resonance of the pickup. By means of the step switch "Resonance" different large capacitances can be added and thus the resonance of the pickup can be corrected to lower frequencies.

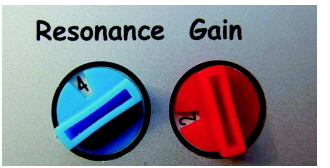
2.2 "Amp"
Outputt to the amplifier
Connect the now arbitrary long cable to the amplifier here. By means of the step switch "Gain" a gain of up to 4x (+12dB) can be set for the signal between input and output.

If the *AG*1.0 is switched on ("Power" switch to "On"), the here connected cable no longer affects the resonance of the pickup.

If the *AG*1.0 is off ("Power" switch to "Off"), a true bypass is activated and the cable has influence again on the resonance and thus the sound of the instrument.

The *AG*1.0 only consumes current if a cable is plugged in here, otherwise it is switched off automatically

3. Adjustments



3.1 "Resonance"
Switchable input capacitances
Capacitances can be added gradually to the input here. With increasing capacitance, the resonance of the pickup is pushed towards lower frequencies. In position "0" no capacitance is added, in position "9" it's about 800pF, corresponding to an app. 6m long guitar cable with medium quality.

3.2 "Gain"
Gain adjustment
A gain can be gradually set here for the signal between input ("Guitar") and output ("Amp"). In position "0" there is no additional gain (1x / 0dB), in position "9" it's app. 4x (+12dB).

4. Power supply / Battery replacement

4.1 Battery / Run time

The *AG*1.0 is powered by an internal 9V battery. Run time is approximately 500 hours (alkaline).

4.2 Battery monitoring

The condition of the battery is continuously monitored and reported outwards by the color of the flashing "Bat" LED (app. every 2 sec.).

- GREEN battery fresh, voltage higher than 8V
- YELLOW battery older but still OK, voltage between 6.5V and 8V
- RED battery should be replaced, voltage less than 6.5V
  RED flashing every second = **the battery is very weak (less than 6V), the *AG*1.0 remains in true bypass mode (see also 5.2 / "true bypass")**

4.3 Battery replacement

To replace the battery, the rear cover must be removed.

- Loosen the 2 screws.
- Remove rear cover and plastic frame.
- Separate battery clip from the old battery carefully. To do this, possibly pull out the old battery a bit. Remove the old battery.
- Insert the new battery, positive terminal (smaller contact) outwards.
- Attach the battery clip to the battery whilst checking the correct polarity again. Slide in the battery completely.
- Reattach plastic frame and rear cover carefully (observe openings for LED and switch).
- Tighten the 2 screws again.

5. Power / True Bypass

5.1 Power

The *AG*1.0 only consumes current when the "Power" switch is set to "On" and a plug is inserted into the "Amp / Power" socket. This state is indicated by the "Bat" LED flashing briefly app. every 2 seconds (the color indicates the battery status).

The *AG*1.0 can be turned off by means of the "Power" switch ("Off") or by pulling the plug out of the "Amp / Power" socket.

5.2 True bypass

If the *AG*1.0 is switched off, an internal relay connects the "Guitar" input directly to the "Amp" output, without influencing the signal (true bypass).

After switching the *AG*1.0 on, the battery is checked first and, if OK, the relay is toggled so that the *AG*1.0 lies in the signal path.

If the battery is very weak (less than 6V), the *AG*1.0 remains in true bypass and the "Bat" LED flashes RED about every second.

For more detailed operating instructions and technical explanations, see the internet at www.i2e-audio.de/ag10.htm

6. Technical data

6.1 "Guitar" Instrument input		
	input impedance	1MOhm / 15pF
	max. input voltage	app. 5Vss / 1.8Vrms
6.2 "Amp / Power" output		
	output impedance	100 Ohm
	max. output voltage	app. 9Vss / 3Vrms
6.3 Power supply		
	power supply	internal 9V battery
	current consumption	app. 0.5mA
	battery run time	app. 500h / alkaline
6.4 Switchable input capacitances "Resonance"		
	step switch position 0 - 9	0 - app. 800pF
6.5 Switchable gain adjustment "Gain"		
	step switch position 0 - 9	1x - app. 4x
6.6 Case		
	dimension	100 x 60 x 30 mm
	weight	250g


Proper disposal of this device: Electric waste


Disposal of the battery by battery regulation: Return