

Amplitude Modifier

Audio Signal Modification Unit
User Manual And Technical Reference

ACOUSTIC RESEARCH



In this our 20th year of operation, and on behalf of the entire company; I would personally like to express my deepest gratitude for your continued support of our products and services.

Here at Acoustic Research, we pride ourselves in the quality of our instruments and ensure that every one meets the high standards that our customers deserve. I have no doubt, that the equipment that you have received today will meet those standards just as they did 20 years ago.

I wish you the greatest success in your research

James Chaffinch
James Chaffinch, CEO

References in this publication to Acoustic Research products, programs, or services do not imply that Acoustic Research intends to make these available in all countries in which Acoustic Research operates. Any reference to an Acoustic Research product, program or service is not intended to state or imply that only Acoustic Research's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of Acoustic Research's intellectual property rights or other legally protectable rights may be used instead of the Acoustic Research product, program, or service. Evaluation and verification of operation in conjunction with other products, programs, or services, except those expressly designated by Acoustic Research, are the user's responsibility.

Acoustic Research may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to an Acoustic Research authorized dealer or your Acoustic Research marketing representative, who will be able to forward on the request.

The following terms in this publication are trademarks of Acoustic Research Inc. In the European Union and/or other countries / economic areas.

- Acoustic Research
- Amplitude Modifier

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Acoustic Research may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time.

It is possible that this publication may contain reference to, or information about, Acoustic Research products (machines and programs), programming, or services that are not announced in your country. Such references or information must not be construed to mean that Acoustic Research intends to announce such Acoustic Research products, programming, or services in your country.

Requests for technical information about Acoustic Research products or services for those products, whether they be repair, maintenance or upgrade; should be made to your Acoustic Research authorized dealer or your Acoustic Research marketing representative.

This product's connections follow the Coordinated Universal Interworking Standard (C UIS) and as such can be used with any other product from any manufacturer that also adheres to this standard.

Contents

Description	1
Demonstration Of The Result Of Adjustment Of Various Values	2
Interface	3
Unit Specifications	5

Description

The Amplitude Modifier unit is an audio signal modification device which implements an equation made of basic mathematical operations, allowing the user to modify the incoming signal.

The equation is defined as such;

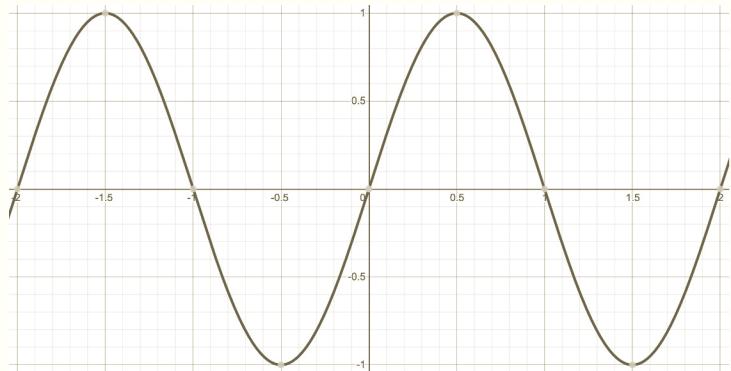
$$\text{output} = \left(\text{sign} \times \frac{\text{input}}{\text{divisor}} \right) + \text{offset}$$

The output from this equation is then passed to a simple limiting function. The limiting function is defined as such;

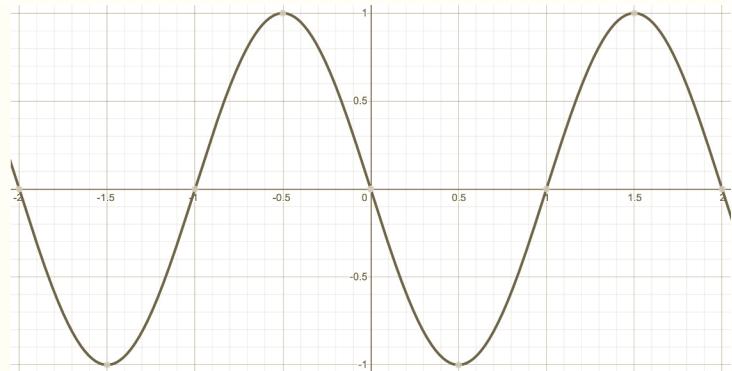
$$\text{output} = \begin{cases} \text{input} >= \text{upper limit} : \text{upper limit} \\ \text{input} <= \text{lower limit} : \text{lower limit} \\ \text{else: input} \end{cases}$$

The seven values of these equations correspond to the seven value sources on the device. See the ‘Interface’ section for details.

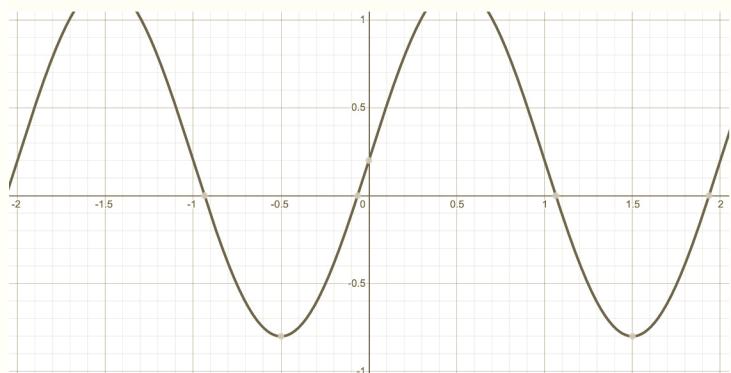
Demonstration Of The Result Of Adjustment Of Various Values



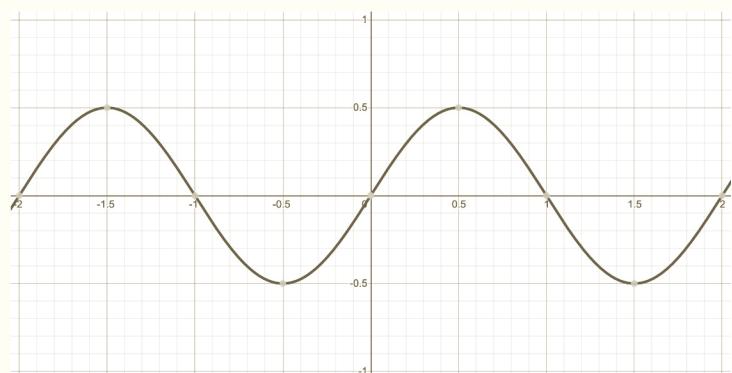
Input Signal



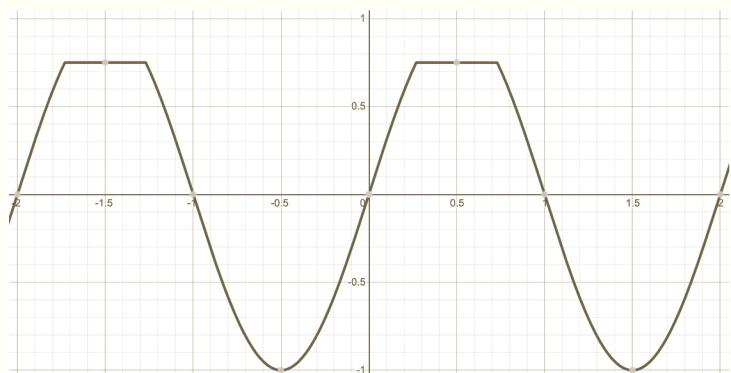
Signal Inverted



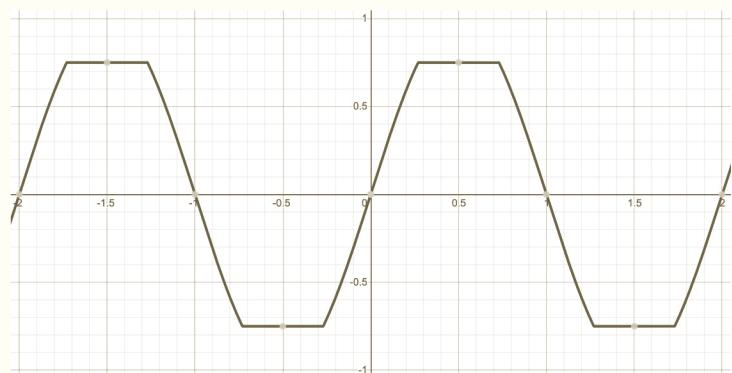
Offset: +0.2



Divided By: 2

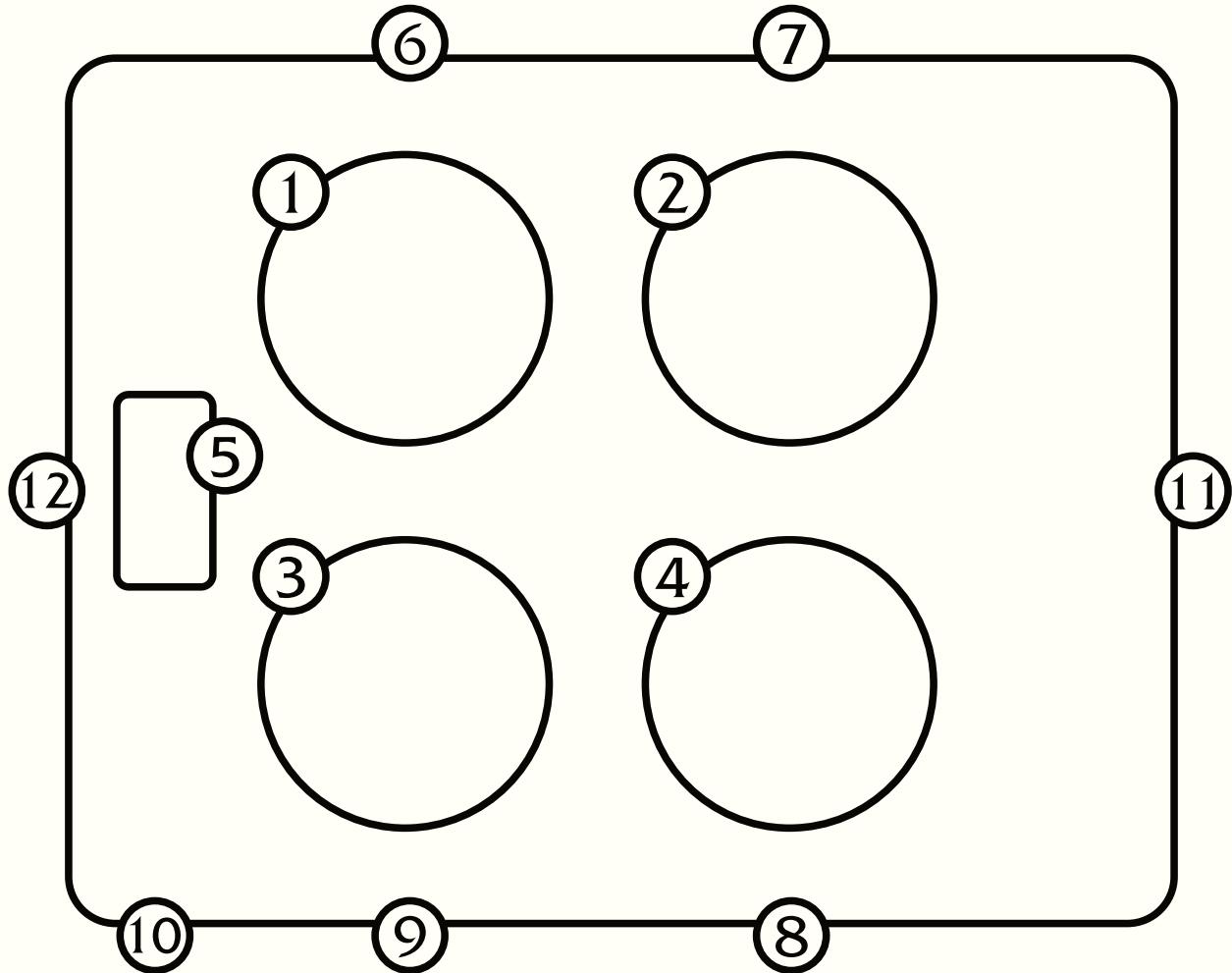


Upper Limit: 0.75



Upper Limit: 0.75, Lower Limit: -0.75

Interface



1. Offset Dial

Used to shift the signal up or down, adding a number between -1 and 1. This value is added after multiplication of the sign value, and as such is never inverted.

2. Ceiling Dial

Used to define the maximum value a signal can reach, and clamp the outgoing value to the defined value should it be exceeded. Values range between 0 and 2. Defined in the equations from the ‘Description’ section as “upper limit”.

3. Divide By Dial

Used to set the value that the signal will be divided by. Values range between 1 and 8. Defined in the equations from the ‘Description’ section as “divisor”.

4. Floor Dial

Used to define the minimum value a signal can reach, and clamp the outgoing value to the defined value should it be exceeded. Values range between -2 and 0. Defined in the equations from the ‘Description’ section as “lower limit”.

5. Invert Switch

Used to invert the signal, switching between “1” and “-1”. Defined in the equations from the ‘Description’ section as “sign”.

6. Offset Dial Voltage Control

A voltage control input connection port which directly modifies the Offset Dial (1). Control is between the values of -1 and 1.

CUIS type: Green

7. Ceiling Dial Voltage Control

A voltage control input connection port which directly modifies the Ceiling Dial (2). Control is between the values of 0 and 2.

CUIS type: Green

8. Divide By Dial Voltage Control

A voltage control input connection port which directly modifies the Divide By Dial (3). Control is between the values of 0 and 7.

CUIS type: Green

9. Floor Dial Voltage Control

A voltage control input connection port which directly modifies the Floor Dial (4). Control is between the values of -2 and 0.

CUIS type: Green

10. Invert Switch Signal Control

A signal control input connection port which directly modifies the Invert Switch (5). Active signals toggle this value.

CUIS type: Red

11. Audio Signal Input

The audio signal input connection

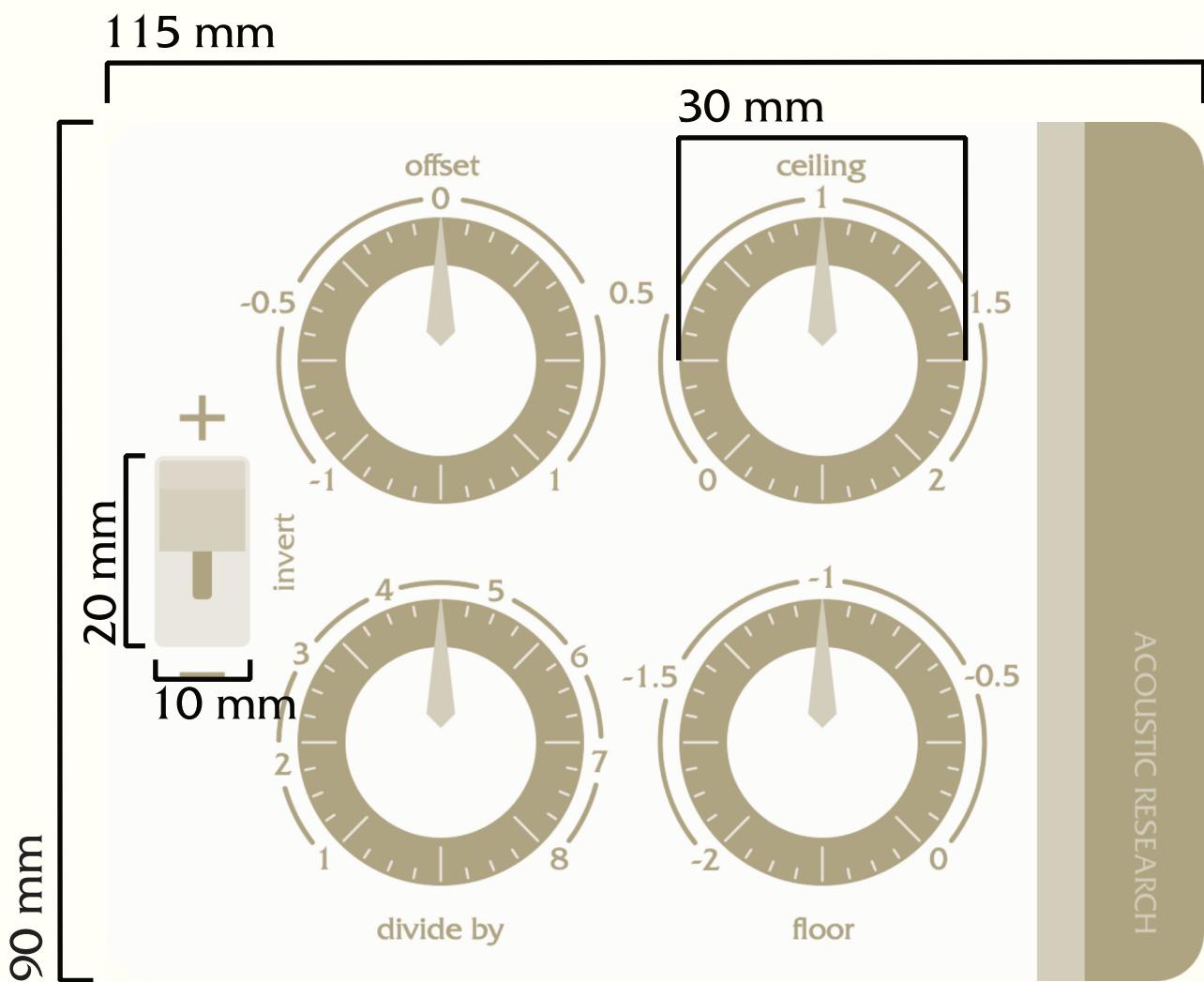
CUIS type: Orange

12. Audio Signal Output

The audio signal output connection

CUIS type: Orange

Unit Specifications



© Copyright Acoustic Research Inc. 1981. All rights reserved