DSPmicro

DSPmicro is an input processing PCB assembly designed to partner Linea's MiniPod amplifiers to drive powered loudspeakers. Innovative use of the latest generation of integrated DSP yields a flexible, programmable processor at a cost which matches that of a traditional analogue solution.

- Factory programmable parameters
- 1 input and 1 or 2 outputs
- Wide range of 96kHz processing options
- User controls and indicators
- Input de-balancing and conditioning
- Keen pricing

Introduction / Key Features

Although the DSPmicro is small it packs in the features, providing a simple but complete interface for an active loudspeaker. The user is provided with quality Neutrik™ XLR connectors for input and link through, an input gain control, configurable processing mode switch and indicators for power, signal and clipping/limiter activity.

Signal processing is flexible and typically provides the key elements to optimise loudspeaker performance. Functions include gain, high and low pass filters, delay, multi band fully parametric equalisation, dynamic equalisation and signal limiters. The DSP provides one or two outputs, optimised to drive Linea's MiniPod amplifiers. Simple and keyed interconnections on industry standard ribbon cables complete the picture of a beautifully engineered class leading product.

Configuration

DSPmicro is configured to provide processing for one audio input and either one or two audio outputs (2 versions being available). The input and output signals are processed by a layout of processing elements which we have formed into a number of 'templates'. We have a wide range of such processing elements including equalisation, low/high pass filtering, level control, delay, protection limiting, dynamic equalisation, compression etc. Typical signal processing block diagrams below illustrates two example templates. Other layout templates are also available. Special alternative templates may be available for high volume applications. Processing is usually at 96kHz. More complex templates run at 48kHz.

A jumper on the product allows the input headroom to be chosen from one of two values.

Modes

DSPmicro allows two variants of filter parameters to be set up. Each setting is called a *Mode*. Modes may be used, for example, to select an alternative high-pass frequency as may be required if a speaker is used with or without a separate sub-bass unit.

The Mode is selected by the user using the Switch on the front of the assembly.

Indicators

Three LED indicators show power, signal and limit. By integrating closely with the MiniPod amplifier, the indicators are able to show clipping not only within the DSPmicro, but also in the amplifier. Similarly, the Limiter LED shows limiting action not only in DSPmicro, but also in MiniPod.

OEM Settings

All of your settings for a given loudspeaker may be encapsulated into a 'hex' file. Subject to minimum order quantity, we are happy to convert your settings into such a file which, in a few seconds, can be loaded into DSPmicro units in your production area, using a USB hex loader which we can supply.

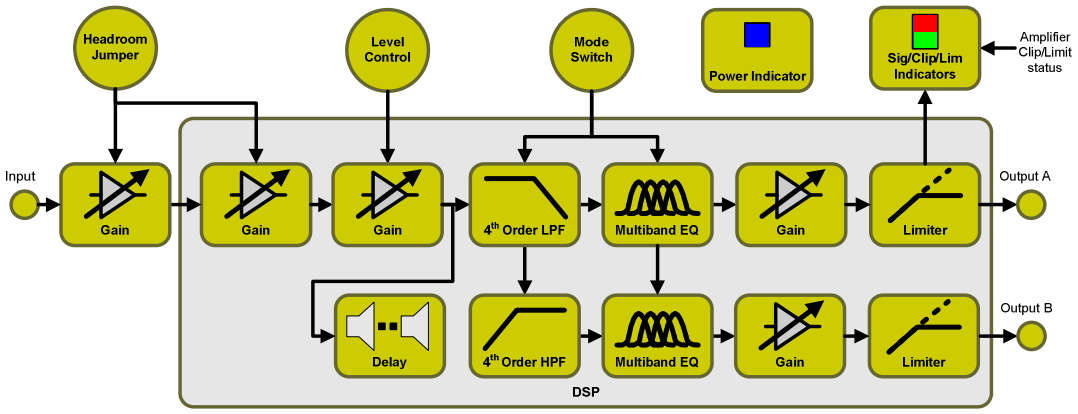
We recommend that you arrive at your required settings using a Loudspeaker Management device such as the Linea Research LSC24 or LSC26.

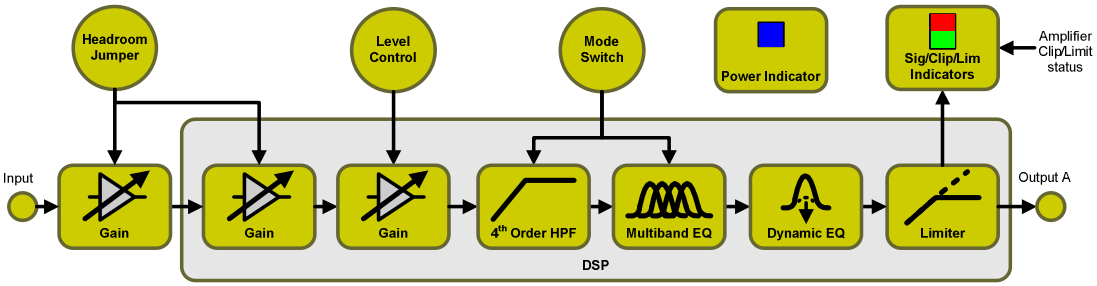
Technical Specifications

Input impedance:	12k Ohm unbalanced 24k balanced
Max Input level:	+10dBu or +18dBu
Max Output level:	+5.6dBu
Sample rate:	96kHz
Frequency Resp:	20Hz - 20kHz+/-0.5dB 10Hz - 40kHz +/- 1dB
Dynamic range :	102dB A (0dB DSP gain) 98dB A (+10dBu Input) (20Hz - 20kHz)

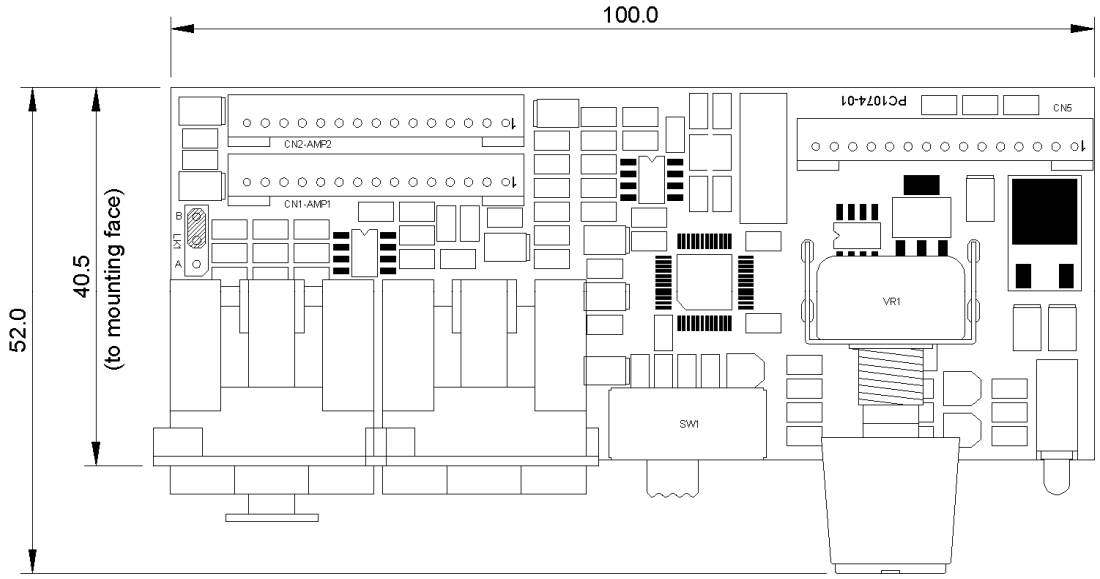
THD (20Hz–20kHz): <0.01%
E&OE

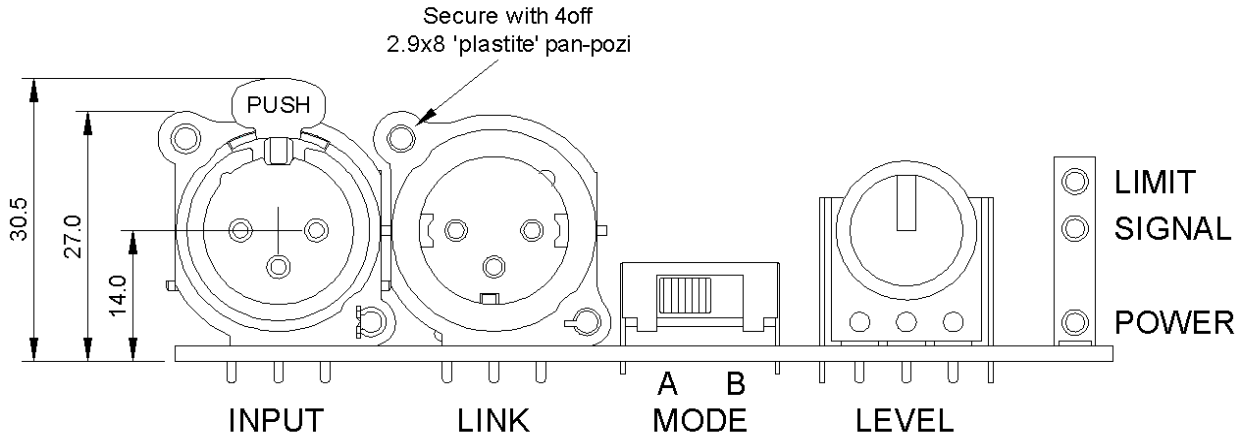
Block Diagrams with Typical Processing Templates

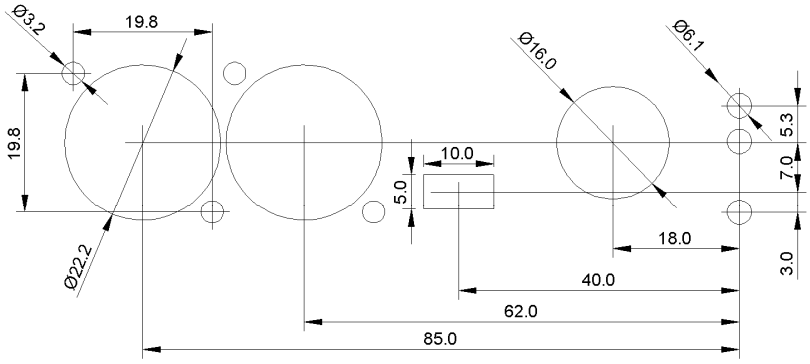




Drawings







ALL DIMENSIONS ARE IN MILLIMETRES