LFD Audio Design Philosophy

At LFD we believe that audio amplifiers can be most easily optimised if the basic amplifier topology is kept as simple as possible. Feedback is generally kept to a minimum, provided the distortion is sensibly low. We do not accept that very low distortion produces subjective improvements. Actually it is more preferable to have slightly higher total harmonic distortion that possesses higher levels of lower harmonics, compared to a lower figure made up from higher harmonics. Also it is important to have well designed signal routing and Earthing combined with the best selection of high quality passive components.

This philosophy normally produces amplifiers that may at first appear unusual. Typically the Printed Circuit Boards (PCB) will be topologically laid out according to the circuit and will always utilise star Earthing. Signal routing within the amplifier topology is kept to an absolute minimum when transferred onto the PCB and is typically 5 times shorter in length than an average amplifier. We do not advocate the use of signal routing on a PCB, since subjective evaluation has established that high quality audio cables exhibit less degradation compared to printed circuit board tracks. Consequently, it may be found that there is more wiring within an LFD amplifier compared to its immediate competition. Each separate cable assembly is subjectively evaluated to establish the best possible choice. Often single strand cables and multistrand cables will be mixed within a given product.

The selection of passive components is a very important factor in the design of an amplifier. Subjective evaluation is essential in this selection, together with reliability. It has been found that the most optimum component for a particular circuit location, may differ from every other similar part. As an example, it is not normally possible to use the same resistor type for every resistor within an amplifier, each position must have a type that produces the best subjective results. This process also applies to the choice of capacitor used within the circuit and any capacitor used as a power supply decoupling component. The iterative procedure is very time consuming and means that product development is slow and methodical. There is no easy solution to this problem, but perseverance does bring its rewards of better sound quality.

Power supply design plays an important part within any amplifier, so great care is required in this area. Generally we believe local decoupling is beneficial within an amplifier, combined with a main supply that exhibits low impedance even up to high frequencies. The power supply return paths within an amplifier must be clean and well executed, otherwise there may be undesirable coupling with the circuit. The mains transformer design also has an influence on sound quality, and we have found that transformers with lower copper losses and better regulation often confer improvements.

Many factors effect the subjective performance of an amplifier, so each one must be carefully addressed to produce an excellent sounding product. We believe that our philosophy does bring rewards in the areas of better transparency, resolution and dimensionality. Remember that fashions come and go, but true quality always lasts.

THE LFD CHARTER TO PRODUCT COMMITMENT AND TRADITIONAL VALUES

LFD Audio is a British audio company that applies traditional British values to design and manufacture together with a total commitment to product excellence. To underline this ethos LFD have written a "Charter to Product Commitment and Traditional Values" to explain both their design approach and product support to their customers, dealers and distributors:

All audio system designs originate in the United Kingdom (UK) and are produced within the company, there is no sub-contracting of complete product to overseas companies or re-badging of equipment totally manufactures outside the UK. As such all products have a distinctive quality and design character often using original concepts that reflect the team's many years of experience in the field of audio research and design.

All product manufacture is undertaken within the UK and includes the preparation of circuit boards, casework and product assembly. Often this process involves considerable hand craftsmanship performed within the UK to achieve the final quality of finish.

LFD aspires to producing the finest sounding audio systems that reflects the highest standards of the British audio tradition. Products incorporate a synthesis of high-quality electronic design, extensive subjective optimization and quality hand finishing. We aim to produce long lasting audio equipment that will satisfy the human sensitivities of sound quality, visual and aesthetic appeal and of touch.

Electronic components are sourced internationally and such effort is directed to discovering the best parts and sub-assemblies for product designs that conservatively match electronic performance requirements and where appropriate, subjective appraisal. This philosophy is applied to all aspects of a system including cabling, passive components, active devices and where appropriate, precision mechanics.

LFD believe that the goal of audio engineering is to achieve the highest standards of sound quality. The company openly admits and adheres to a programme of subjective optimization and recognises the importance of evaluation as the final performance arbiter. However, we equally believe in engineering excellence and in achieving the highest standards of objective performance commensurate with system philosophy that is biased towards the minimalist school in terms of signal processing.

The company supports the highest aspirations in performance of analogue audio equipment and is a strong advocate of analogue reproduction via vinyl.

LFD has a total commitment to digital audio where we attempt an holistic philosophy that unites analogue and digital systems in order to extract the highest performance from this medium. We encourage and support only developments in digital audio that genuinely advances sound quality.

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