

FRIED PRODUCTS COMPANY

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PRELIMINARY -- the STUDIO 5

The STUDIO 5 is a three way, floor standing loudspeaker. Compact in size (38½"Hx12"Wx18"D), it contains two transmission lines, one for the midrange, and one for the bass. Its performance is made possible by the most advanced technology and transmission line loading, and can be compared to that of the great FRIED transmission line reproducers.

For many years the technology found in the giants has been adapted to more compact designs. This was true in the days of the IMF Studio, and is equally true today. The STUDIO 5 incorporates drivers, crossovers, and line technology first developed for the highly regarded D/2 system; a speakers whose development was built on a quarter century of work on high performance transmission line loudspeakers.

The drivers: The woofer is an 8", vented pole piece, polypropylene. The mid driver is a 6½", vented pole piece, graphite impregnated polypropylene. The treble unit is a ¾", double chambered dome. All the drivers are engineered with linear magnet systems, for improved dynamic range-- thus avoiding the compression effects of lesser drivers.

The crossovers: The series networks developed for the larger FRIED loudspeakers are adapted to the STUDIO 5. Properly designed, series networks are superior to parallel networks in maintaining closer control over the drivers, at all program levels. They are phase coherent, with "quasi second order" attenuation rates; the inflection points are 200 Hz. and 2.7Khz. All drivers are in the same absolute polarity, maintaining the maximum in homogeneity and timbral accuracy.

The enclosures: The midrange backs into a heavily damped, tapered chamber, open to the rear of the speaker. Below that is the dome, and below that the woofer, which is enclosed in a tapered and contoured line, folded three times, and terminating at the bottom front of the enclosure. The front edges of the enclosure are beveled, to minimize diffraction re radiation effects.

Why transmission lines? Because they are acoustically superior to other enclosure types! Conventional loudspeakers place the midrange in a box, which must inevitably produce rear wave reflections back at the driver and through the enclosure walls; which must be "reactive" (resonant) at some frequencies. Whereas, in the STUDIO 5, the rear energy leaves the driver, never to reflect back at it! In essence, all possibility of "time smear" from reflections is removed.

Similarly, in the bass range, uncontrolled reflections back at the cone are eliminated. At the very lowest frequencies of interest, the mass of air in the line is combined with the mass of the driver diaphragm, into an enormous "equivalent acoustic air mass: a very large piston, which reproduces the lowest frequencies effortlessly.