

Mechanical resonance of the diaphragm is visible at 8,400 Hz and the decoupling frequency is on schedule at 10 kHz. Considerable hash is seen around 14 kHz and the predicted dip may or may not be there. The tube cross mode is still at 17 kHz.

A final dotted response curve is seen in Figure 10 using an experimental voice coil and diaphragm which will be the subject of another paper in this session. The three diaphragms of Figure 10 are driven at different input voltages.

Since the Smith design is characterized by a finite spacing between the edge of the chamber and the largest ring, the magnetic field strength is enhanced by as much as 15 - 20% over the case wherein the pole piece is brought to an edge to accommodate the phasing plug.

CONCLUSION

Recent innovations in phasing plug design have added spice to the life of the transducer designer. It still remains to be shown, however, that any one design is superior to any others. A design optimization procedure for the concentric ring type has been reviewed. Such procedures for optimization of the salt shaker and the radial slot are eagerly awaited.

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