

# ACOUSTIC IMPEDANCE MATCHING VS PUSH-PULL CONDENSER

## COMPARATIVE NONLINEAR DISTORTION REPORT

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In order to quantify improvements achieved, the push-pull design - as implemented in the popular MKH40 microphone - is measured for nonlinear distortion and the results are compared to the acoustic impedance matching Model A design.

### INTRODUCTION

Since the push-pull capacitive transducer is widely held as having the best nonlinear distortion performance it was decided to obtain specimen examples and measure them for nonlinear distortion in order to quantify the improvements seen in the acoustic impedance matching design.

A pair of Sennheiser MKH40 microphones, in good working order, were available for testing and were measured using the difference frequency test.

### RESULTS

Generally, the condenser microphones in the test are shown to have higher nonlinear distortion.

While the push-pull MKH40 shows some improvement over the single back-plate C414buls, distortion remains significantly higher than that of the acoustic impedance matching Model A below ~7kHz, where the critical 'speech range' exists.

