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Ben-Haim et al.(10) **Pub. No.: US 2022/0416736 A1**(43) **Pub. Date: Dec. 29, 2022**(54) **MULTI-CORE DIGITAL POWER AMPLIFIER
WITH UNBALANCED COMBINER**(52) **U.S. Cl.**CPC *H03F 3/24* (2013.01); *H03F 3/602*
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(57)

ABSTRACT

Various embodiments provide systems, devices, and methods for a multi-core digital power amplifier with an unbalanced power combiner. In one example, two or more cores are combined with a transformer section that has a first coupling coefficient and another two or more cores are combined with a second transformer section that has a second coupling coefficient that is different than the first coupling coefficient. The outputs of different cores may be cross-coupled with the primary inductors of the transformers. The digital power amplifier may provide an output power that is flat over a relatively wide operating range. Other embodiments may be described and claimed.

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