

## **A Novel Design in the Use of Planar Transformers for LDMOS Based Amplifiers in Bands II, III, DRM+, DVB-T and DAB+**

**Authors :** Antonis Constantinides, Christos Yiallouras, Christakis Damianou

**Abstract :** The coaxial transformer-coupled push-pull circuitry has been used widely in HF and VHF amplifiers for many decades without significant changes in the topology of the transformers. Basic changes over the years concerned the construction and turns ratio of the transformers as has been imposed upon the newer technologies active devices demands. The balun transmission line transformers applied in push-pull amplifiers enable input/output impedance transformation, but are mainly used to convert the balanced output into unbalanced and the input unbalanced into balanced. A simple and affordable alternative solution over the traditional coaxial transformer is the coreless planar balun. A key advantage over the traditional approach lies in the high specifications repeatability; simplifying the amplifier construction requirements as the planar balun constitutes an integrated part of the PCB copper layout. This paper presents the performance analysis of a planar LDMOS MRFE6VP5600 Push-Pull amplifier that enables robust operation in Band III, DVB-T, DVB-T2 standards but functions equally well in Band II, for DRM+ new generation transmitters.

**Keywords :** amplifier, balun, complex impedance, LDMOS, planar-transformers

**Conference Title :** ICECECE 2015 : International Conference on Electrical, Computer, Electronics and Communication Engineering

**Conference Location :** Berlin, Germany

**Conference Dates :** May 21-22, 2015