

## **The effect of tracking generator efficiency to overall RF power amplifier system efficiency**

### **ABSTRACT**

This paper presents efficiency performance findings of RF power amplifier (RFPA) systems from a comparative study between an RFPA with a conventional envelope tracking (ET) system, an RFPA with an auxiliary envelope tracking (AET) system and an RFPA with a fixed bias supply. The results demonstrated that the tracking generator's design in AET system has less dependency towards the overall system efficiency and this relaxed the requirement of the tracking generator's design. This AET RFPA system shows large improvement in efficiency as compared to fixed supply and conventional ET system also suggests that AET system has potential to be the preferred technique in efficiency improvement.

**Keyword:** Efficiency improvement; Envelope tracking; RF power amplifier