

To clock or not to clock

Self oscillating topologies excel in simplicity, size, loop gain and efficacy.

Why in efficacy? Because the decrease of the switching frequency at higher output levels is a remarkable advantage for the power stage.

In partially or fully digital studio application there is often the desire to have all devices synchronized from a master clock in order to avoid effects of aliasing and/or beating effects.

Further on selfoscillating topologies you cannot get benefit of BD mode in bridged applications and also run not synchronized with their SMPS.

Let's have a look to the beating between left channel and right channel in a stereo system.

Figure 1 shows two self oscillating amplifiers in the most simple arrangement of hysteretic oscillators. The second amp has a slightly lower oscillation frequency, because of +1% tolerance of C4.

Figure 1: Two hysteretic selfoscillating amps

