TRF8010

QUESTION: Does the TRF8010 have band-limited matching on chip? Could it work at 400 MHz?

Answer: The TRF8010/11 is inherently a relatively "broad-band" device but does have interstage matching on-chip. The GSM evaluation board is particularly matched for 880-915MHz via the off-chip output match. Although the 8010/11 is relatively broadband in the 900MHz region, it has approximately 20+dB of small-signal gain at. Because the interstage power match is not broad-band, when you power match for 400MHz on the output, the output power may be degraded. One should also consider the TRF7003 device. This inexpensive Silicon device has a great deal of gain at 400MHz.

QUESTION: I have a sample TRF8010 Driver Amplifier set up for 4.8V GSM operation. Can I modify the board for 3.6V operation?

ANSWER: The 4.8V GSM TRF8010 boards were designed for a minimum output power of 23dBm at 900 MHz. The equivalent output impedance changes when a power transistor is re-biased. If you operate at 3.6V without retuning the output match, the TRF8010 should yield about 18dBm. If you retune for 3.6V operation, we expect about 21dBm. Retune the 4.8V GSM EVM boards for operation at 3.6V by shorting out R1 and replacing L1 with a 6.8nH value.