HIGH FREQUENCY RECEIVER PREAMPLIFIER WITH CMOS RAIL-TO-RAIL CAPABILITY

ABSTRACT

A folded cascade receiver amplifier with constant gain has inputs coupled to PMOS and NMOS differential transistors pairs with scaled geometries. The transconductance of both PMOS and NMOS transistors is the same whether the common mode input voltage is low or high. In a first version the transconductance of both PMOS and NMOS differential transistor pairs is reduced when the common mode input voltage is at mid-rail. Resistive means between current sources and the sources of the PMOS and NMOS transistor pairs force the current source transistors into the triode region of operation. A second version insures a constant voltage gain through control means which maintain a constant ratio of the transconductance of the output stage transistors versus the PMOS and NMOS differential transistor pairs when active.

Figure no. 2 is suggested for publication.