TRANSMIT POWER LEVEL DETECTION CIRCUIT WITH ENHANCED GAIN CHARACTERISTICS

Abstract

A circuit for maintaining the magnitude of a radio frequency (RF) signal at at least one predetermined level employs a detection circuit (16) coupled to an RF signal generator (10) by a four port coupling device (12). An impedance inverter (30) in series with a diode (D3) is connected between the load termination (L) of the coupling device (12) and ground. This series combination approximates a short circuit as the output signal power approaches a predetermined low amplitude threshold, and approximates an open circuit as the output signal power approaches a predetermined upper amplitude threshold, so that gain is provided to signals received by the detection circuit below a first amplitude level and attenuation is provided to signals received by the detection circuit above a second amplitude level. The circuit requires substantially less power than conventional circuits, so that only 1%-2% or less of the output of the amplifier (10) need be diverted for reliable operation, even for RF output power levels of the order of a fraction of a milliwatt.

FIG. 2