Abstracts

A Ku-band frequency-tunable active matched feedback MMIC amplifier using variable-capacitance elements

K. Yamanaka, K. Sugaya, Y. Horiie, T. Yamaguchi, N. Tanahashi and Y. Itoh. "A Ku-band frequency-tunable active matched feedback MMIC amplifier using variable-capacitance elements." 2000 MTT-S International Microwave Symposium Digest 00.3 (2000 Vol. III [MWSYM]): 1895-1898.

A Ku-band frequency-tunable active matched feedback MMIC amplifier using variable-capacitance elements has been developed for active phased array antennas. It employs two-stage series feedback amplifiers combined with the active matched interstage network using series and shunt variable-capacitance elements. With the use of the active matched circuits in the design of interstage networks, the matching frequency can be tuned without affecting noise figure and power performance. In addition, the frequency-tunable characteristics can be achieved by using poor isolation of the series feedback amplifiers. Applying to the design of Ku-band two-stage low-noise MMIC amplifiers, a frequency-tunable range from 17 GHz to 17.8 GHz (a relative bandwidth of around 4.6%) has been achieved.

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