Abstracts

On-chip matching Si-MMIC for mobile communication terminal application

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Recent developments of BiCMOS Si-MMICs for wireless communication applications are reviewed. Among these MMIC's, on-chip matching Si-MMICs are suitable for use in compact transceivers. The use of coplanar waveguide (CPW) type spiral inductors is one of the solutions to achieve low loss matching circuits on a low resistive Si substrate used in standard BiCMOS process. An on-chip matching Si-MMIC front-end has been fabricated, in which CPW type spiral inductors are employed. The measured performance at 1.9 GHz with low d.c. power consumption shows the possibility of application to mobile handset terminals. In addition, the feasibility to implement the system on-chip concept is discussed by referring to an IF/PLL IC fabricated in the same process.

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