

A Floating-Gate-MOS-Based Low-Power CDMA Matched Filter Employing Capacitance Disconnection Technique

Toshihiko YAMASAKI, Tomohiro FUKUDA, and Tadashi SHIBATA*

Department of Electronic Engineering, School of Engineering

*Department of Frontier Informatics, School of Frontier Science

The University of Tokyo

7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, Japan

{yamasaki, fukuda}@if.t.u-tokyo.ac.jp, shibata@ee.t.u-tokyo.ac.jp

Low-power and compact CDMA matched filters have been developed based on the floating-gate MOS technology. The low-power operation has been achieved by employing the single-step matching scheme and disconnecting the coupling-capacitors unnecessary for the matching operation. The 255-chip matched filter fabricated in a 0.35- μm technology demonstrated 6mW operation at 3V power supply and the chip rate of 5MS/s, while occupying the chip area of 1.0 mm².