Superconductor Microelectronics and Security for Software Defined Radio

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Abstract

Software Defined Radio (SDR) technology offers unprecedented flexibility in mobile radio systems, particularly in Personal Communication Systems (PCS) infrastructure. Superconductor microelectronics provides digital processing at a level of performance high enough to enable new SDR system architectures. Communications security, viewed from a high level as assurance that the system is performing as desired, can be enhanced by the functionality of such architectures.

This paper explores the enhanced capabilities of SDR implementations using superconducting microelectronics, and considers the security implications for normal operations, system reconfiguration, spectrum management, and alternative modes of operation.