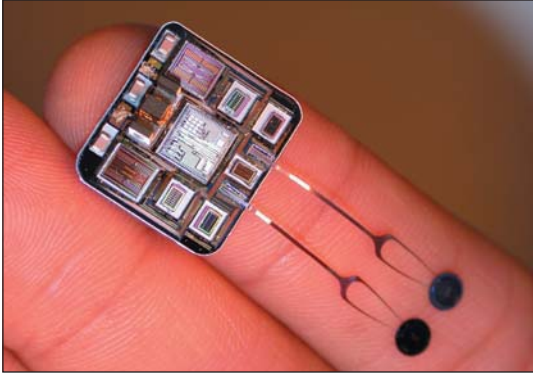


## A Wireless Implantable Cortical Microsystem

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A 64-channel, single-unit, neural recording microsystem has been developed and tested for the first time. The penny-size device is capable of wirelessly recording from different regions of the brain, detecting action potentials (spike events) above a user-programmed threshold on all the channels simultaneously, or digitizing any one of the channels with 8-bit resolution. The system is powered and programmed through an inductive frequency-shift-keyed (5MHz/10MHz) telemetry link. Outgoing neural information is amplified, compressed, Manchester encoded, OOK modulated, and wirelessly transmitted to an external host. This present microsystem consumes 14.4mW, measures 1.55cm x 1.4cm, and weighs 275mg. Scaling to a three-chip version of the system is underway. ■