

Sony Develops Wireless Chip Connections

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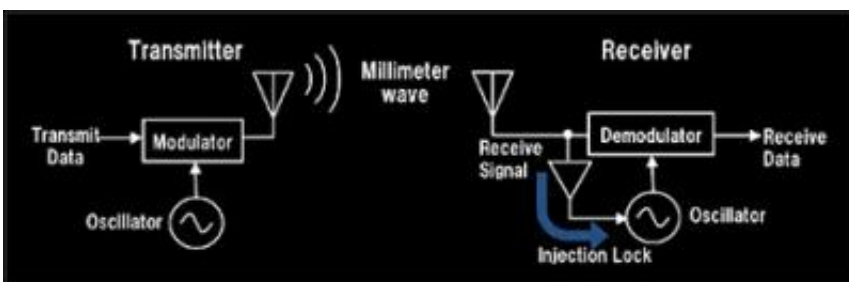
(PhysOrg.com) -- Sony has recently developed a wireless chip alternative to today's chips that use conventional pin connections. This sets new limits on how small an electronic device can be.

By using millimeter wave technology, operating in the 30 to 300 GHz spectrum, a short-range link can be established between devices. Sony has already tested a 40-nanometer CMOS [prototype system](#) and achieved transfer speeds of 11 gigabits per second operating at 56 GHz over a distance of 14 millimeters.

By moving data between chips, with wireless technology, allows for simpler substrates and IC packaging. Wireless also enhances the reliability of movable and detachable components in certain products.

Sony's system incorporates a free-running transmitter [oscillator](#) and an injection lock system. The injection lock system allows the receiver

frequency to lock-in (synchronized) with the transmitter's frequency. This eliminates the need to employ a phase-lock loop approach that is generally used for synchronization.



Injection lock system is used in the receiver to synchronize it to the transmitter frequency. This eliminates the need for phase-lock loop system that uses more power and takes up additional space. Credit: Sony Corp.

Sony will be rolling out their [wireless technology](#) in phases. The first phase will be to enhance the reliability of movable and detachable components and for data transfer between printed circuit boards. Phase two incorporates the technology into chip packages. In phase three Sony will integrated directly into system-on-chip devices that will roll out into their consumer product line.

Sony envisions the elimination of pins and wiring that will allow for a clutter free circuit board. The technology is still being refined and no commercialization dates have been announced. Sony has stated, "the potential to launch it within three years is strong. Once we are satisfied with the layout and performance, then we can start production immediately."

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