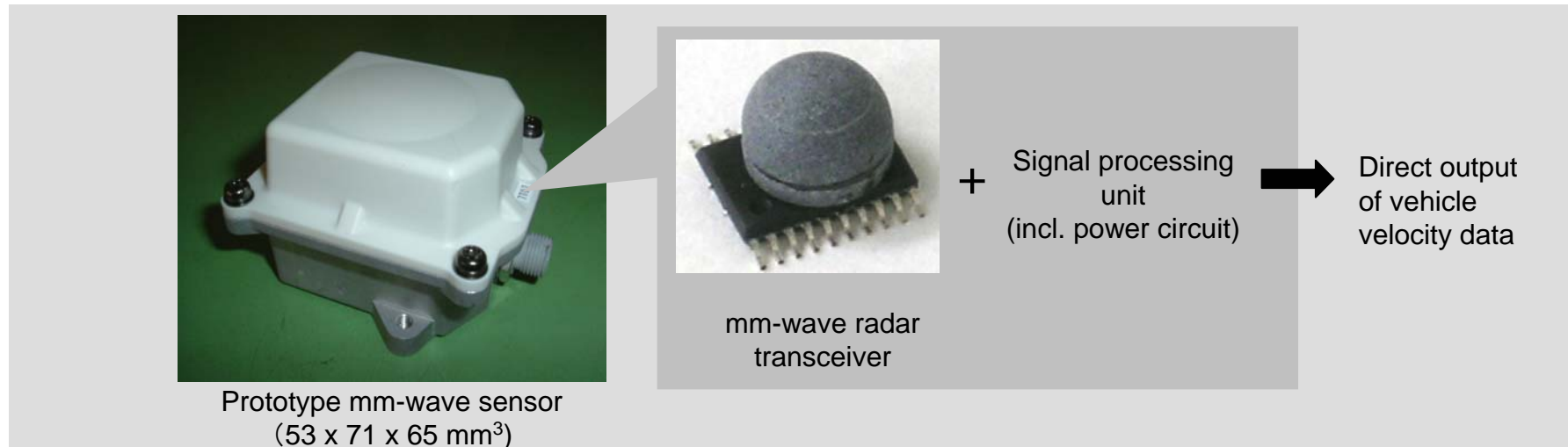


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Ground speed sensor technology developed for motor vehicles using mm-wave radar – A single chip sensor with plastic resin package achieving a compact and low cost module –



Hitachi, Ltd. announced today the development of a compact and low cost speed sensor technology for motor vehicles which provides accurate measurement of relative velocity using an mm-wave radar (77GHz band). The technology enables the relative velocity of a motor vehicle to the ground to be measured by beaming millimeter-wavelength radio waves (mm-wave) on to the ground. Compared to conventional wheel-speed sensors which calculate velocity by detecting wheel rotation, the new sensor is able to measure velocity even during braking or slipping when the tires are not rotating. Further, by dedicating to near-range sensor applications, an innovative design enabled the antenna and mm-wave transceiver to be integrated into one chip, to achieve a compact unit in a plastic resin-molded package measuring 6.5mm (l) x 4.4mm (w) x 6.0mm (h). The design innovation enabled stable sensor operation even with standard plastic resin packaging used for conventional semiconductor chips, and dispensed with the need to design a dedicated module configuration normally required for mm-wave applications. A dome-shaped compact lens structure fabricated with the plastic resin was also proposed to focus the radio waves. As a result, the issue of minimizing costs in mm-wave radars was addressed as well as achieving a compact unit.

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This technology will be presented at the 2008 IEEE Compound Semiconductor IC Symposium (CSICS) to be held from 12th - 15th October 2008 in Monterey, California, U.S.A.