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ParkerVision's claims refuted by its own website disclosures.

Until recently, it was difficult to ascertain specific details of the fraudulent D2D claims made by ParkerVision, Inc. (NASDAQ: PRKR) (Price: \$24.3125). Previously, ParkerVision's technology claims had to be extracted from over three and a half years of conflicting statements contained in disparate documents. In response to reports of stock fraud, however, ParkerVision has attempted to support its claims with application notes and diagrams published on a new website. Instead of supporting these claims, ParkerVision's new disclosures prove that its previous technology claims were fabricated. The website clearly documents the ParkerVision fraud to anyone with even a minimal knowledge of the integration of radio components onto integrated circuits. We have now obtained an independent electrical-engineering analysis of the notes and claims on ParkerVision's new website. The following is a summary of the engineering analysis of ParkerVision's most damaging disclosures.

ParkerVision claims that the D2D can be a complete "radio on a chip." The company also claims that its D2D technology can be applied to the eventual realization of a universal radio, capable of operating on many different radio frequency ("RF") standards. However, even if one assumes the data reported on ParkerVision's D2D website was honestly and accurately recorded, detailed engineering analysis of the information contained on the website shows that the D2D is not even a complete radio, much less a complete radio on a chip. In fact, the website exposes the D2D as a mere conglomeration of commercially available components.

The D2D prototype as described on ParkerVision's own website does not integrate all components onto a single chip. The prototype does not include an analog baseband signal processor, a frequency synthesizer or sub-harmonic clock, a low-noise amplifier (LNA), a channel filter, or a transmit power amplifier. Instead, the D2D prototype simply uses commercially available radio components. The primary problem in placing a complete radio onto one integrated circuit is the interference generated between components. Of particular concern is the combination of an LNA with other noisy components on one CMOS silicon substrate. It is impossible to measure this crucial interference unless data is measured from a fully integrated transceiver. Because the D2D prototype does not integrate all elements onto one chip, the sensitivity data ParkerVision provides is utterly meaningless. In addition, there is no data on the website that even remotely supports ParkerVision's claim that "D2D offers the significant advantage that the radio can be easily integrated in bulk CMOS using non-challenging geometry and combined with the baseband processor and/or MAC chips." There is also no support for the claim that the D2D "enables very large scale integration because it occupies little die space and can be easily implemented in standard CMOS with no special processing." Neither of these statements can be verified without measured data from a fully integrated radio system.

ParkerVision's second major claim for D2D is that it is capable of processing various RF standards at a wide range of carrier frequencies, from 900MHz to 3GHz. Direct conversion receivers, which already exist for many applications, convert data from RF to baseband in a single step. This means that both integrated and discrete baseband channel filters already function on a wide variety of RF frequencies and standards. A baseband filter, however, is not part of the D2D. The D2D prototype uses an off-the-shelf baseband filter. Without an integrated baseband filter, ParkerVision cannot possibly substantiate its claim that "D2D-based radios can meet or exceed the exacting standards of digital cellular phones, paging, wireless LANs, GPS and other communication products." There is no evidence, in particular,

that the D2D could meet such aggressive radio applications as high-selectivity cellular systems. ParkerVision is reporting 13dB NF at 1GHz and 20dB at 2.4GHz. This is inadequate to meet the requirements of the GSM system, for which a noise figure of less than 8dB would be required. At best, it appears that the only functionality D2D provides is a simple frequency translation from RF to baseband, a commonly available function. ParkerVision has provided no evidence that suggests the D2D presents any competitive advantage over other transceivers already on the market.

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