



KOLLOQUIUM

Institut für Elektrotechnik, Elektronik und Informationstechnik

100 Gbps wireless communication: Can we do it in silicon?

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Donnerstag, der 06.11.2008, 17¹⁵ Uhr
Cauerstraße 7/9, Hörsaal H5

Diskussionsleitung: Prof. Dr.-Ing. G. Fischer

Silicon technologies like CMOS, SiGe bipolar, and SiGe BiCMOS have made tremendous progress towards ever higher device cutoff-frequencies which are now in the range of over 250 GHz for production technologies. Highly-integrated silicon frontend-ICs enable mm-Wave Frontends at chip cost below 1 USD as well as strongly reduced HF packaging and test cost. Therefore mm-Wave communication has the potential to penetrate consumer application markets.

60 GHz silicon-based chipsets in both CMOS and SiGe have already been demonstrated by IHP and others. Communication in the 60 GHz band will enable wireless short range communication (<10 m) with 1 to 10 Gbps. It has been predicted that even 100 Gbps wireless short range links will be required by 2015. Envisioned applications include multi-media streaming to portable devices (“video iPod”) and computer cable replacements (wireless USB).

The talk will present RF frontend ICs from 60 GHz up to more than 100 GHz in IHP’s SiGe:C BiCMOS technologies. It will give an outlook on future SiGe BiCMOS technology development and will discuss the feasibility of mm-Wave short range communication well beyond 10 Gbps.