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WE3E: Frequency Conversion and Control Component IC's

Wednesday 26 May 2010

Time 13:20 - 14:40

Room: 207D

Chair: Brad Nelson, RFMD

Co-Chair: Bert Henderson, *Cobham Sensor Systems*

WE3E-2

1:40 PM

A Dual-Mode mm-Wave Injection-Locked Frequency Divider with Greater than 18% Locking Range in 65nm CMOS

H. M. Cheema¹, X. Yu², R. Mahmoudi¹, P. T. van Zeijl³, A. van Roermund¹, ¹Eindhoven University of Technology, Eindhoven, Netherlands, ²Zhejiang University, Hangzhou, China, ³Philips Research, Eindhoven, Netherlands

A dual-mode mm-wave injection locked frequency divider operating at 39.5 and 59.5 GHz is presented. Achieving a locking range of 18% and 20% in divide-by-2 and 3 modes, it consumes 4 mW from a 0.8 V supply. Implemented in a bulk CMOS 65nm technology, it occupies a core area of 0.03mm². The dual-mode operation is enabled by differential direct injection and Miller capacitance de-tuning. Two new figure-of-merits for proper comparison of ILFDs are also presented.