Experimental prototype of modified CMOS Gilbert multiplier with current output

Roman ŠOTNER, Roman PROKOP, Vilém KLEDROWETZ, Jan JEŘÁBEK, Lukáš FUJCIK

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Abstrakt – This cell was designed and fabricated in AMIS/ONsemiconductor CMOS07 0.7 um I2T100 (5 V supply) technology in frame of the Europractice (mini@sic) academic consortium. The designed circuit serves for experimental verifications of advanced multi-parameter electronically controllable active devices based on modular approach (interconnection of several basic sub-blocks) and their applications. The multiplying core utilizes modified Gilbert conception and differential voltage to current converter is used at the output of circuit in addition. Input range of both differential voltage pairs (X and Y) is up to ±300 mV approximately and 3 dB bandwidth of current transfer (to short) up to 2 MHz. The range of adjustable transconductance (by DC voltage – one input voltage is used for control) is 0 to 2/3 mS (for 0 to ±1.5 V).