

List of Phase Models' Parameters				
Parameter of the phase Model	Value	Parameter of the 3rd Gen Prototype	Value	Comment
ω_k	$24 \cdot 2\pi \cdot 10^9 Hz$	$\omega_k = 2\pi f_k$	$24 \cdot 10^9 Hz$	intrinsic SLL frequency
K_k^{VCO}	$2\pi \cdot 754,64 \cdot 10^6 Hz/V$	$K_{VCO}^{prebias}$	$754,64 \cdot 10^6 Hz/V$	sensitivity of the VCO at f_{VCO}^{out}
A_k^{bias}	$2.12V$	$A_k^{prebias}$	$2.12V$	pre-bias voltage of the VCO at f_{VCO}^{out}
τ^{cc}	$0...10ns$	τ^{cc}	$0...10ns$	crosscoupling time-delay
A_k^{PD}	$1.6V$	$A_k^{PD} = A_k^{PD,max} - A_k^{PD,min} = \overline{V_{A-\bar{A},max}} - \overline{V_{A-\bar{A},min}}$	$0.8 - (-0.8) = 1.6V$	voltage of the PD
$A_k^{PD,off}$	$-A_k^{PD}/2$	$A_k^{PD,off}$	$0V$	offset voltage of the PD
$G_k^{a,1}$	$0.01...0.85^1$	$G_k^{a,1}$	$-20dB... -1.5dB$	gain (damping) of the first adder
$G_k^{a,2}$	1	$G_k^{a,2}$	$0 dB$	gain of the second adder
G_k^{LF}	1	G_k^{LF}	$0 dB$	loop filter gain
τ_m^{cax*}	$1/(2\pi \cdot 120 \cdot 10^6) Hz^{-1}$	$\tau^c = \frac{1}{\omega_c} = \frac{1}{2\pi f_c}$	$120MHz$	maximum cut off frequency given by VCO
v_k	$1...512$	v_k	$1...512$	division of the VCO's frequency
K_k	$2\pi \cdot 301.856 \cdot 10^6 G_k^{a,1} Hz/V$	$K_k = K_k^{VCO} G_k^{a,1} G_k^{a,2} A_k^{PD}/2$	$...$	coupling strength

¹ For the conference paper IMS $G_k^{a,1} = 1$.