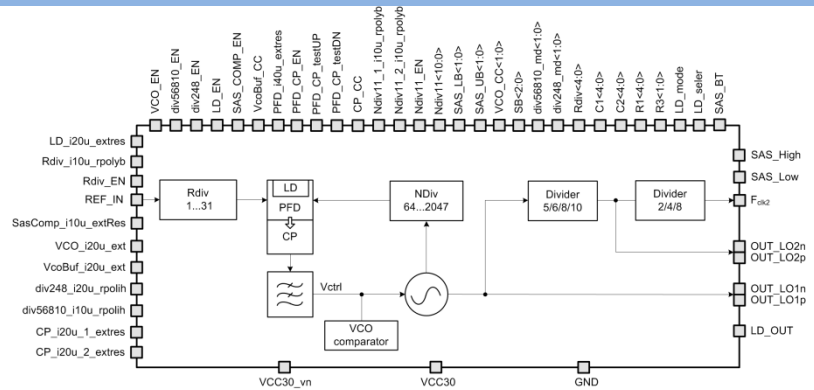


## 1.013 to 1.217 GHz phase-locked loop

### OVERVIEW

Frequency synthesizer built on PLL by dividing the integer coefficients. Synthesizer unit includes: R-divider of external reference oscillator frequency with a programmable division factor of 1 to 31, frequency-phase detector (PFD) with the charge pump, loop filter, a voltage controlled oscillator (VCO), VCO voltage control comparators, VCO frequency N-divider with programmable dividing ratio of 64 to 2047, 5/6/8/10 divider, 2/4/8 divider.



IP technology: AMS SiGe BiCMOS 0.35um.

IP status: silicon proven.

Area: 2.99mm<sup>2</sup>

### ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Condition	Value			Unit
			min	typ.	max	
Supply voltage	V <sub>cc</sub>	-	2.85	3.0	3.15	V
Operating temperature range	T <sub>j</sub>	-	-60	27	+85	°C
1 <sup>st</sup> local-oscillator frequency range	F <sub>LO1</sub>	-	1013	-	1127	MHz
2 <sup>nd</sup> local-oscillator frequency range	F <sub>LO2</sub>	-	175	-	225	MHz
1 <sup>st</sup> local-oscillator peak-to-peak output voltage	A <sub>VCO</sub>	Differential input	500	600	700	mV
PLL division ratio	N <sub>PLL</sub>	-	64	-	2047	-
Reference frequency	F <sub>ref</sub>	-	10	12.8	125	MHz
Reference frequency divider ratio	R <sub>PLL</sub>	-	1	-	31	-
VCO phase noise at 1 MHz offset	PN <sub>VCO</sub>	-	-	-	-123	dBc/Hz
Clock frequency	F <sub>CLK</sub>	-	10	-	125	MHz
Clock frequency output voltage	A <sub>CLK</sub>	Differential signal	460	-	700	mV
DC clock frequency output voltage	V <sub>DC_CLK</sub>	Normal mode	-	V <sub>cc</sub> -0.12	-	V
		LVDS mode	-	V <sub>cc</sub> -1.75	-	V
Frequency synthesizer current consumption in an active mode	I <sub>cc</sub>	-	-	19.7	23.5	mA
Frequency synthesizer current consumption in stand-by mode	I <sub>stby</sub>	-	-	6	460	nA
Clock buffer current consumption in an active mode	I <sub>ccCLK</sub>	-	1.6	1.8	2	mA
Clock buffer current consumption in stand-by mode	I <sub>stbyCLK</sub>	-	-	3	100	nA
Input logic-high level	V <sub>IH</sub>	For digital inputs	0.7V <sub>cc</sub>	-	V <sub>cc</sub> +0.3	V
Input logic-low level	V <sub>IL</sub>		-	-	0.3V <sub>cc</sub>	V