

KEY FEATURES

- Integer PLL with low accumulated jitter, suitable for analog sampling applications
- Very low jitter - Long-term accumulated jitter (RMS): 5pS
- High VCO frequency of 800-1600MHz provides flexibility in input and output frequency combinations
- Output frequency granularity of 1.0 MHz with an output frequency range of 8 MHz – 64 MHz
- Short lock time of 15 μ S from power up
- Power Supply
 - 3.3V \pm 10%
 - 1.2V \pm 10%
- SMIC 130nm 1P6M G process, with 3.3V IO MOS

OVERVIEW

CC2416INPLL-SM130G is ideal for generating the analog sampling frequencies at a very low accumulated jitter (RMS) of 5pS. Its high VCO frequency range of 800MHz-1.6GHz makes it suitable for generating output frequencies with 1 MHz granularity with very small accumulated jitter. The PLL has a very fast lock time of 15 μ S.

DIFFERENTIATION

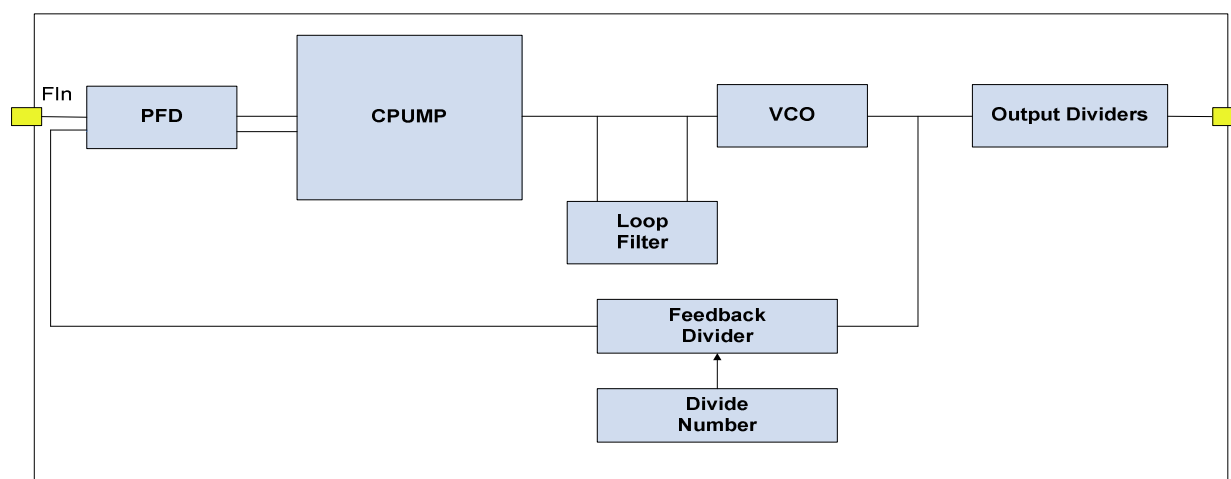
This PLL can be used to generate clocks with very low accumulated jitter with very fast lock time. The output frequency can be changed in steps of 1 MHz. This is made possible by the high VCO frequency and other internal design techniques.

The high PSRR is another useful aspect that makes the PLL robust

APPLICATIONS

- Clock for analog sampling
- WLAN, WiMax, communication systems

BLOCK DIAGRAM



SPECIFICATIONS TABLE

Parameter		Condition	Value			Units
			Min	Nom	Max	
Power Supply	VDD33		3	3.3	3.6	V
	VDD12		1.08	1.2	1.32	V
Temperature			-40		125	C
Input Frequency			24		25	MHz
VCO Frequency			768		1600	MHz
Feedback divider (programmable)			32		254	Counts
Output frequency			8		64	MHz
Output frequency granularity					1.0	MHz
Output clock duty cycle			50			%
Frequency settling after power-up		24MHz input			15	uS
Jitter – accumulated long-term RMS		24MHz input			5	pS
Tolerable Supply Noise						
	VDD33				50	mV
	VDD12				20	mV
Power			Contact ip@cosmiccircuits.com			mW
Area			Contact ip@cosmiccircuits.com			mm ²
Process			SMIC 130nm G 6LM 3.3V IOMOS			
Status			GDS Available			

Note-1: Product specifications are subject to change without notice. No responsibility is assumed for use of information herein.

Note-2: Products specifications such as that described above can typically be altered and customized for specific applications. Contact Cosmic Circuits for more information.

ABOUT COSMIC CIRCUITS

Cosmic Circuits is a provider of differentiated and complex Analog, Mixed-Signal & RF Silicon IP cores. We create and provide IP cores that are best-in-class and thereby make our customers' solutions differentiated and low-cost.

Cosmic Circuits has quickly grown to be a company with the potential to become the destination of choice for world-wide customers for their complex and differentiated Analog, Mixed-Signal & RF Intellectual Property needs.

DIFFERENTIATED IPS

We endeavor to create and provide Analog-IP solutions that are unique in functionality, burn the least amount of power, and take up minimal silicon die-area. 'Best-in-Class' is our Mantra. By using our analog-IP cores, our customers can expect their solution not to be disadvantaged because of analog, and even better, let the analog stand-out as a differentiating factor for the entire solution.

We value our unique blend of deep and broad analog skills and understanding of systems. Our customers can engage with our experts on the type of customization that needs to be done, or the kind of trade-offs to make, and expect the interaction to be a rewarding experience.

DELIVERABLES

We provide the following deliverables to aid quick and reliable integration into the design flow. Please contact us for any additional views.

- ✓ GDSII
- ✓ Netlist (Spice format for LVS)
- ✓ Footprint (LEF format)
- ✓ User documentation
- ✓ Module integration guidelines
- ✓ Datasheet
- ✓ Silicon validation report (where available)
- ✓ Evaluation board (where available)

LICENSING AND CUSTOMIZATION

Our engagements-models includes single-use and multi-use licensing of our IP-cores, Customization of IP-cores, Process porting of the cores to the customers' target process, turn-key development and licensing of customized IP cores and full-chip solutions, as well as supply of Known-Good-Dies (KGD) of full-chip ICs.

SUPPORT

We consider ourselves successful when our customers succeed. We offer active support, both during the chip integration phase and during the product-ramp phase. We offer on-site support when needed. With Cosmic Circuits, our customers can be assured of a reliable partner interested in the success of the end product.

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