Tahoe RF Semiconductor, Inc.

TRFS-254
WDCMA RF Divider

Typical Applications

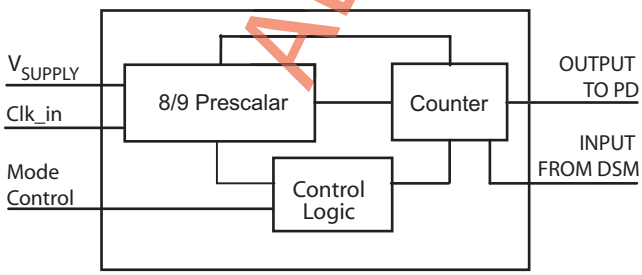
The TRFS-254 is a WDCMA RF divider core circuit for use in such applications as:

- Frequency synthesizers
- General-purpose applications
- WCDMA, UMTS, CDMA, GSM, PCS, WLAN, GPS, AMPS systems

Product Overview

The TRFS-254 WCDMA RF divider is used in frequency synthesizers for wireless communications applications. An input RF frequency of 1000MHz is divided over a range from 56 to 1023. The divider circuit has an 8/9 prescalar that receives input derived from the VCO, and a counter that uses input from a delta sigma modulator. The counter provides the divided output to the phase-frequency detector. The circuit uses a supply voltage of 2.85V for analog circuitry, and a nominal digital supply for mode control. The mode control selects the divide range as well as shuts down the synthesizer. This core circuitry can be easily integrated with other circuits as well as packaged individually in a leadless chip carrier.

Block Diagram



Key Features

- RF divide range from 56 to 1023 for frequency synthesizers
- Frequency resolution of Fref/2^{18}
- Digital control of divide range

Performance Summary

Item	Unit	Min	Typical	Max	Notes
Input Frequency	MHz	900	1000	1200	
Frequency Resolution	Hz				Fref/2^{18}
RF Divider Range (N)		56		1023	
Input Signal Level	mVp-p		200		
Supply Voltage Digital (VDD)	V	1.8	2.0	2.2	
Supply Voltage Analog (VCC)	V	2.7	2.85	3.3	
Total Supply Current	mA		3	4	Includes the internal bias generator
Mode Control	Digital	VIL		VIH	VIL turns the synthesizer off

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