

Typical Applications

The TRFS-501 is an Analog Baseband Chip use in such applications as:

- WCDMA Systems
- UMTS Systems

Product Overview

TRFS-501 is an Analog Baseband Chip used between a front-end RF receiver and a Digital Baseband section in a WCDMA receiver channel. The analog baseband circuit provides gain control, low pass filtering and DC offset compensation for I and Q channels. The variable gain amplifier (VGA) provides an analog-to-digital converter (ADC) with a single gain value in both I and Q channels. The gain is properly set using an external automatic-gain controller. The DC offset compensation circuit removes the DC offset levels due to both the internal and external signal sources. Filtering is used at the input of each channel to eliminate adjacent channel interference. The core can be easily packaged into a leadless chip carrier.

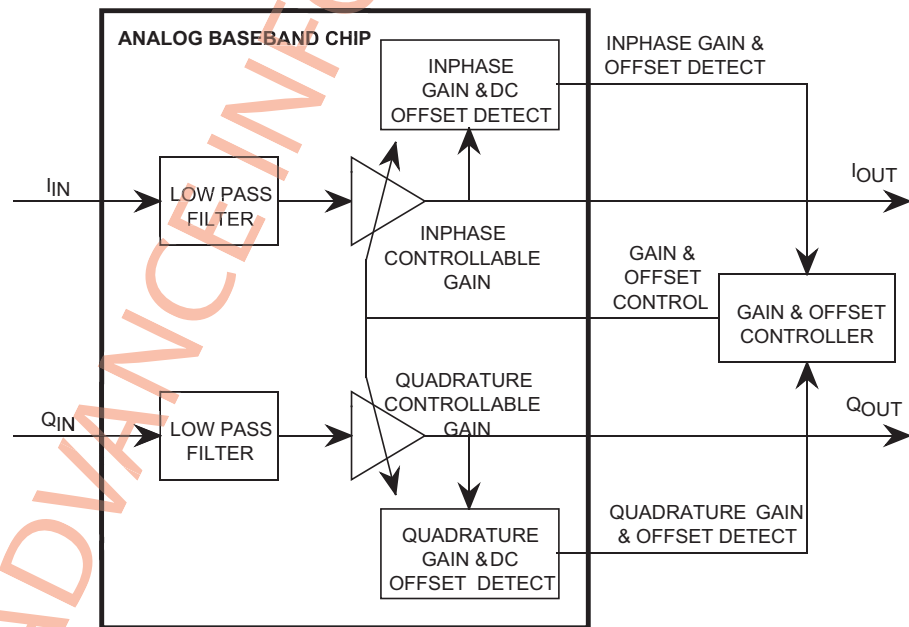
Key Features

- Compatible with WCDMA standard
- VGA gain control from 0-52dB using AGC
- Filtering to eliminate adjacent channel interference
- Peak-peak output levels < 1V differential
- Good linearity with IP2 and IP3 of 250mVrms

Performance Summary

Item	Unit	Min	Typical	Max	Notes
Analog Supply Voltage	V	2.7	2.85	3.3	
Digital Supply Voltage	V	1.8	2.0	2.2	
Supply Current	mA		18		
Pass Band	MHz		1.9		@-3dB
Gain Range	dB	0		52	
Gain Step	dB		1		
Pass band Gain Variation	dB		< ±0.1		
Output Voltage (Differential)	Vp-p		1		
Input Referred Noise Density	nV/√Hz			10,000	@ maximum gain
Residual DC offset	mV		±62.5		
I/Q Gain Mismatch	dB		±0.25		
I/Q Phase Mismatch	Degree		±3		
Rejection	dB		23		@3MHz
	dB		49		@5MHz
	dB		66		@7MHz
	dB		> 80		@8MHz
IIP2	mVrms		250		
IIP3	mVrms		250		

Block Diagram



Contact: sales@tahoerf.com
Tahoe RF Semiconductor, Inc.
12834 Earhart Ave
Auburn, CA 95602
<http://www.tahoerf.com>
(530) 823-9786