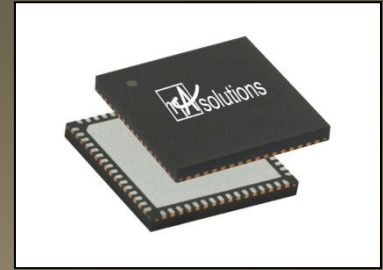


NS2210-15

High Precision N-Bit Delta-Sigma
Analog to Digital Converter



Features

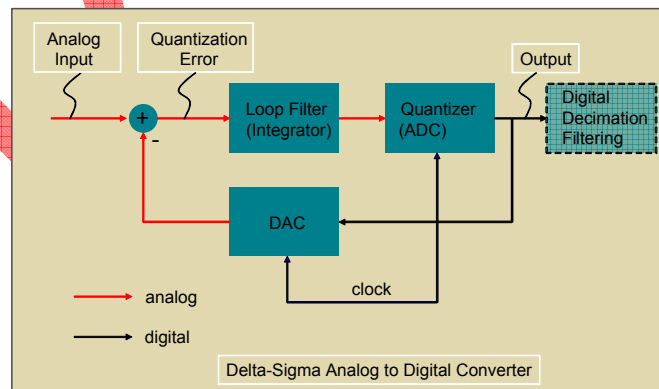
- Scalable bandwidth and frequency
- Resolution is 14 bits at 135kHz bandwidth
- Resolution is 12 bits at 2MHz bandwidth
- Clock rate up to 125 MHz
- INL and DNL +/- 1 LSB noise
- 65nm digital CMOS process
- Single Supply Operation at 2.5V

Benefits

- Silicon proven design
- Ultra-Low Power consumption with 5mA at 2.5V per channel.
- Small silicon footprint at 0.25 sq mm
- Scalable 65 nm CMOS

Applications

- GSM/EDGE
- CDMA 2000
- WCDMA
- Wireless Transmitters



Description

The NanoAmp Solutions NS2210-15 is a general purpose programmable 3rd to 5th order continuous-time Sigma-Delta analog to digital converter. The ADCs are based on a 1-bit $\Sigma\Delta$ modulator that uses a programmable sampling frequency of 52MHz, 104MHz, and 125MHz for different performance and bandwidths. The output digital stream is a 1 bit digital signal representing 12-14 bits of resolution depending on the mode of the A/D converter.

An optional decimation filter for GSM/EDGE and WCDMA is available for filtering the output for these applications.

Electrical Characteristics

Parameter	Conditions	Min	Typ	Max	Units
Analog Supply Voltage		2.25	2.5	2.75	V
Digital Supply Voltage		2.25	2.5	2.75	V
Analog Supply Current			5		mA
Digital Supply Current			1		mA
Power Down Current			1		uA
Input Clock		52	104	125	MHz
Bandwidth		135	260	2000	kHz
Full-Scale Input Voltage			2.5		V
SNR			75-85dB		
INL		-1		1	LSB
DNL		-1		1	LSB
THD			0.1		%
Turn on time			10		uS
Operating Temperature		-30		85	C
Area Analog			0.25		mm ²
Area Digital			0.10		mm ² (opt)

Legend

O = Output
 I = Input
 IO = Input/Output
 P = Power (Supply or Ground)
 A = Analog Signal

