

NXP single 14-bit, 125 Msps
ADC with input buffer & CMOS/
LVDS DDR outputs ADC1115S
series, ADC1215S series and
ADC1415S series

Single-channel ADC with input buffer for High-IF applications

Supporting sample rates up to 125 MSPS, this single-channel, 10 to 14 bit ADC delivers excellent dynamic performance and features an integrated input buffer for use in High-IF applications.

Key features

- ▶ SNR: 72 dB typical, SFDR: 87 dBc typical
- ▶ Integrated low-power BiCMOS input buffer supporting input bandwidth up to 800 MHz
- ▶ Maximum sample rate: up to 65, 80, 105, or 125 Msps
- ▶ Single-channel, 11, 12, 14-bit resolution pipelined ADC core with dual-stage linearity calibration
- ▶ SPI control/status interface
- ▶ HVQFN40 package

Applications

- ▶ Wireless and wireline broadband communications, especially multicarrier standards
- ▶ Digital Pre Distortion (DPD)
- ▶ Spectral analysis
- ▶ Industrial imaging systems
- ▶ Instrumentation

The NXP ADC 1410S series, ADC1210S series and ADC1010S series are single-channel, 14 to 10 bits analog-to-digital converter (ADC) optimized for high dynamic performance and low power dissipation.

Pin-compatible with the ADC1415Sxxx series, it has an integrated low-power BiCMOS input buffer for use in applications with an input frequency up to 800 MHz. The low-noise buffer amplifier provides constant input impedance and outstanding analog performance over a wide frequency range. The input buffer also offers reduced kick-back noise for sensitive applications.

It is available in four versions, fine tuned respectively to support maximum sample rates of 65, 80, 105, and 125 MSPS. By using a pipelined architecture and dual-stage linearity calibration, it provides high accuracy and guarantees no missing code over the full operating range.

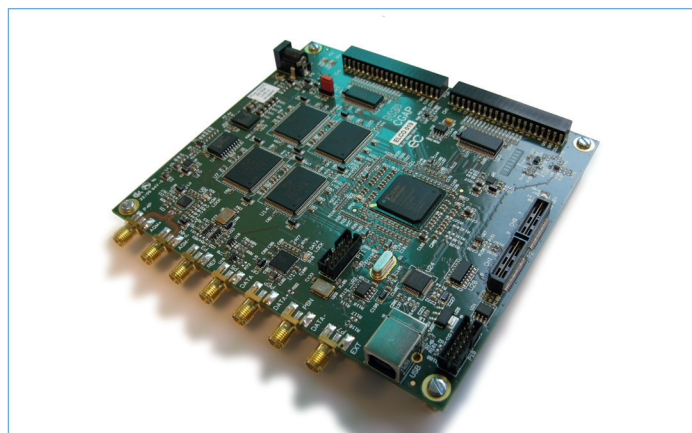
It maintains excellent dynamic performance from baseband to input frequency up to 170 MHz and beyond, making it ideal for applications in wideband communications, imaging and medical equipment.



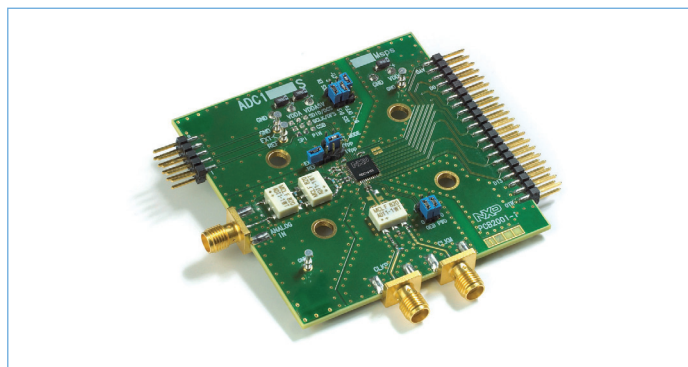
The ADC operates from a single 3-V supply and can, due to a separate digital output supply, source output logic levels from 1.65 to 3.6 V. The input buffer operates from a single 5-V supply.

The addition of a Serial Peripheral Interface (SPI) makes the ADC easy to configure and monitor. All these products and versions are pin to pin compatible which allows easy upgrade in end application.

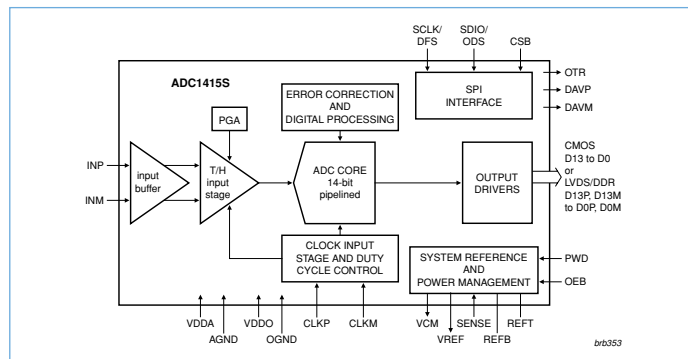
EXTMOD01/DB accessory demonstration board; LVCMOS and LVDS DDR outputs



ADC1415S125/DB demo board



ADC1415S125 block diagram



ADC1415 demoboards

Type	Related demoboard	Description
ADC1415S series	ADC1415S065/DB	ADC1415S065 demo board; both CMOS and LVDS outputs
	ADC1415S065F1/DB	ADC1415S065 demo board; CMOS version; SPI, Regulators and CMOS buffer on board
	ADC1415S065F2/DB	ADC1415S065 demo board; SPI, Regulators on board; LVDS output only SAMTEC connector
	ADC1415S080/DB	ADC1415S080 demo board; both CMOS and LVDS outputs
	ADC1415S080F1/DB	ADC1415S080 demo board; CMOS version; SPI, Regulators and CMOS buffer on board
	ADC1415S080F2/DB	ADC1415S080 demo board; SPI, Regulators on board; LVDS output only SAMTEC connector
	ADC1415S105/DB	ADC1415S105 demo board; both CMOS and LVDS outputs
	ADC1415S105F1/DB	ADC1415S105 demo board; CMOS version; SPI, Regulators and CMOS buffer on board
	ADC1415S105F2/DB	ADC1415S105 demo board; SPI, Regulators on board; LVDS output only SAMTEC connector
	ADC1415S125/DB	ADC1415S125 demo board; both CMOS and LVDS outputs
	ADC1415S125F1/DB	ADC1415S125 demo board; CMOS version; SPI, Regulators and CMOS buffer on board
	ADC1415S125F2/DB	ADC1415S125 demo board; SPI, Regulators on board; LVDS output only SAMTEC connector

Demo boards are also available for all resolutions (11, 12-bit) and all speeds (125, 105, 080, 065 Msps)

ADC1x15D selection table

Family	Type	Description	Input Buffer	Digital interface				Supply Voltage (V)	Power Dissipation per channel (mW)	SFDR (dBc)	SNR (dBFS)	Package
				TTL/CMOS	LVCMOS	LVDS/DDR	CGV™					
ADC1415S series	ADC1415S125	Single 14-bit ADC up to 125Msps	●		●	●		1.8 / 3.0 / 5.0	840	87	71.4	HVQFN40 6x6
ADC1215S series	ADC1215S125	Single 12-bit ADC up to 125Msps	●		●	●		1.8 / 3.0 / 5.0	840	87	69.6	HVQFN40 6x6
ADC1115S125	ADC1112D125	Single 11-bit ADC up to 125Msps	●		●	●		1.8 / 3.0 / 5.0	840	87	66.2	HVQFN40 6x6

Other maximum samples rates (105, 080, 065 Msps) are also available for ADC1415S, ADC1215S

www.nxp.com/dataconverters

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