


AFE Modem 1 ADC 12bit 3.3V 64-Pin LFCSP EP Tray

Manufacturer:	<u>Analog Devices, Inc</u>
Package/Case:	LFCSP
Product Type:	Data Conversion ICs
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	NRND



Images are for reference only

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General Description

The AD9866 is a mixed-signal front end (MxFE®) IC for transceiver applications requiring Tx and Rx path functionality with data rates up to 80 MSPS. Its flexible digital interface, powersaving modes, and high Tx-to-Rx isolation make it well-suited for half- and full-duplex applications. The digital interface is extremely flexible allowing simple interfaces to digital backends that support half- or full-duplex data transfers, thus often allowing the AD9866 to replace discrete ADC and DAC solutions. Power saving modes include the ability to reduce power consumption of individual functional blocks or to power down unused blocks in half-duplex applications. A serial port interface (SPI®) allows software programming of the various functional blocks. An on-chip PLL clock multiplier and synthesizer provide all the required internal clocks, as well as two external clocks from a single crystal or clock source.

The Tx signal path consists of a bypassable $2 \times / 4 \times$ low-pass interpolation filter, a 12-bit TxDAC, and a line driver. The transmit path signal bandwidth can be as high as 34 MHz at an input data rate of 80 MSPS. The TxDAC provides differential current outputs that can be steered directly to an external load or to an internal low distortion current amplifier. The current amplifier (IAMP) can be configured as a current- or voltage-mode line driver (with two external npn transistors) capable of delivering in excess of 23 dBm peak signal power. Tx power can be digitally controlled over a 19.5 dB range in 0.5 dB steps.

The receive path consists of a programmable amplifier (RxPGA), a tunable low pass filter (LPF), and a 12-bit ADC. The low noise RxPGA has a programmable gain range of -12 dB to +48 dB in 1 dB steps. Its input referred noise is less than $3.3 \text{ nV}/\sqrt{\text{Hz}}$ for gain settings beyond 30 dB. The receive path LPF cutoff frequency can be set over a 15 MHz to 35 MHz range or simply bypassed. The 12-bit ADC achieves excellent dynamic performance over a 5 MSPS to 80 MSPS span. Both the RxPGA and the ADC offer scalable power consumption allowing power/performance optimization.

The AD9866 provides a highly integrated solution for many broadband modems. It is available in a space saving, 64-lead lead frame chip scale package (LFCSP), and is specified over the commercial (-40°C to $+85^\circ\text{C}$) temperature range.

Key Features

Low cost 3.3 V CMOS MxFE for broadband modems

12-bit DAC

2×/4× interpolation filter

200 MSPS DAC update rate

Integrated 23 dBm line driver with 19.5 dB gain control

12-bit, 80 MSPS ADC

Third order, programmable low-pass filter

Flexible digital data path interface

Half- and full-duplex operation

Backward-compatible with AD9975 and AD9876

Various power-down/reduction modes

Internal clock multiplier (PLL)

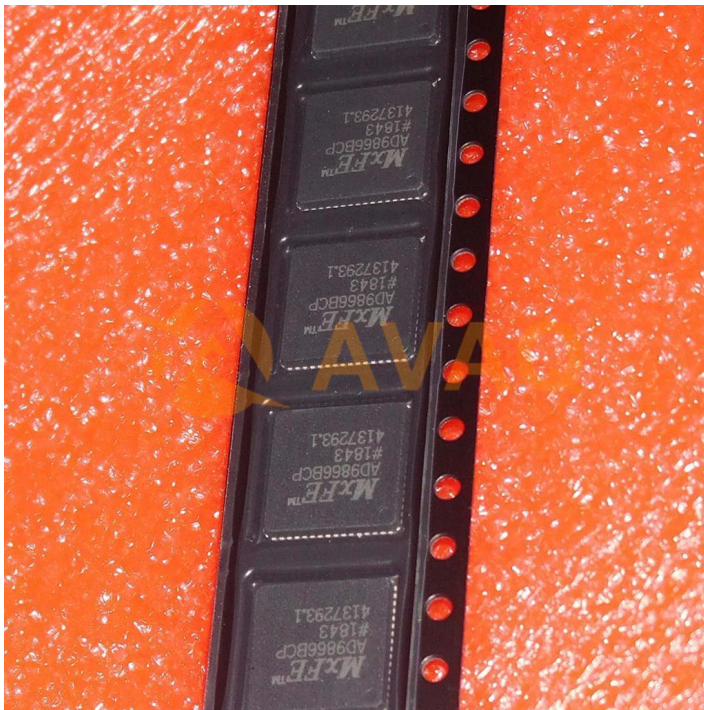
2 auxiliary programmable clock outputs

Available in 64-lead chip scale package or bare die

Application

Powerline networking

VDSL and HPNA



Recommended For You

AD7305BRZ

Analog Devices, Inc

SOP20

AD9910BSVZ

Analog Devices, Inc

TQFP100

AD9831ASTZ

Analog Devices, Inc

QFP

AD5447YRUZ

Analog Devices, Inc
TSSOP

AD5302BRMZ

Analog Devices, Inc
MSOP10

AD5531BRUZ

Analog Devices, Inc
TSSOP16

AD537JH

Analog Devices, Inc
CAN10

AD652AQ

Analog Devices, Inc
DIP

AD654JN

Analog Devices, Inc
DIP8

AD7740YRMZ

Analog Devices, Inc
MSOP8

AD9914BCPZ

Analog Devices, Inc
LFCSP

AD73311ARSZ

Analog Devices, Inc
SSOP20

AD7291BCPZ

Analog Devices, Inc
LFCSP20

AD9954YSVZ

Analog Devices, Inc
QFP

AD2S1205YSTZ

Analog Devices, Inc
LQFP44