

Direct Digital Synthesizer 1000MHz 1-DAC 14bit Parallel/Serial 100-Pin TQFP EP T/R



Images are for reference only

Manufacturer: [Analog Devices, Inc](#)

Package/Case: TQFP

Product Type: Clock & Timer ICs

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

[Inquiry](#)

General Description

The AD9910 is a direct digital synthesizer (DDS) featuring an integrated 14-bit DAC and supporting sample rates up to 1 GSPS. The AD9910 employs an advanced, proprietary DDS technology that provides a significant reduction in power consumption without sacrificing performance. The DDS/DAC combination forms a digitally programmable, high frequency, analog output synthesizer capable of generating a frequency agile sinusoidal waveform at frequencies up to 400 MHz.

The user has access to the three signal control parameters that control the DDS: frequency, phase, and amplitude. The DDS provides fast frequency hopping and frequency tuning resolution with its 32-bit accumulator. With a 1 GSPS sample rate, the tuning resolution is ~0.23 Hz. The DDS also enables fast phase and amplitude switching capability.

The AD9910 is controlled by programming its internal control registers via a serial I/O port. The AD9910 includes an integrated static RAM to support various combinations of frequency, phase, and/or amplitude modulation. The AD9910 also supports a user defined, digitally controlled, digital ramp mode of operation. In this mode, the frequency, phase, or amplitude can be varied linearly over time. For more advanced modulation functions, a high speed parallel data input port is included to enable direct frequency, phase, amplitude, or polar modulation.

The AD9910 is specified to operate over the extended industrial temperature range.

Key Features

1 GSPS internal clock speed (up to 400 MHz analog output)

Integrated 1 GSPS, 14-bit DAC

0.23 Hz or better frequency resolution

Phase noise ≤ -125 dBc/Hz at 1 kHz offset (400 MHz carrier)

Excellent dynamic performance with >80 dB narrow-band SFDR

Serial input/output (I/O) control

Automatic linear or arbitrary frequency, phase, and amplitude sweep capability

8 frequency and phase offset profiles

Sin(x)/(x) correction (inverse sinc filter)

1.8 V and 3.3 V power supplies

Software and hardware controlled power-down

100-lead TQFP_EP package

Integrated 1024 word \times 32-bit RAM

PLL REFCLK multiplier

Parallel datapath interface

Internal oscillator can be driven by a single crystal

Phase modulation capability

Amplitude modulation capability

Multichip synchronization

Application

Agile local oscillator (LO) frequency synthesis

Programmable clock generators

FM chirp source for radar and scanning systems

Test and measurement equipment

Acousto-optic device drivers

Polar modulators

Fast frequency hopping

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