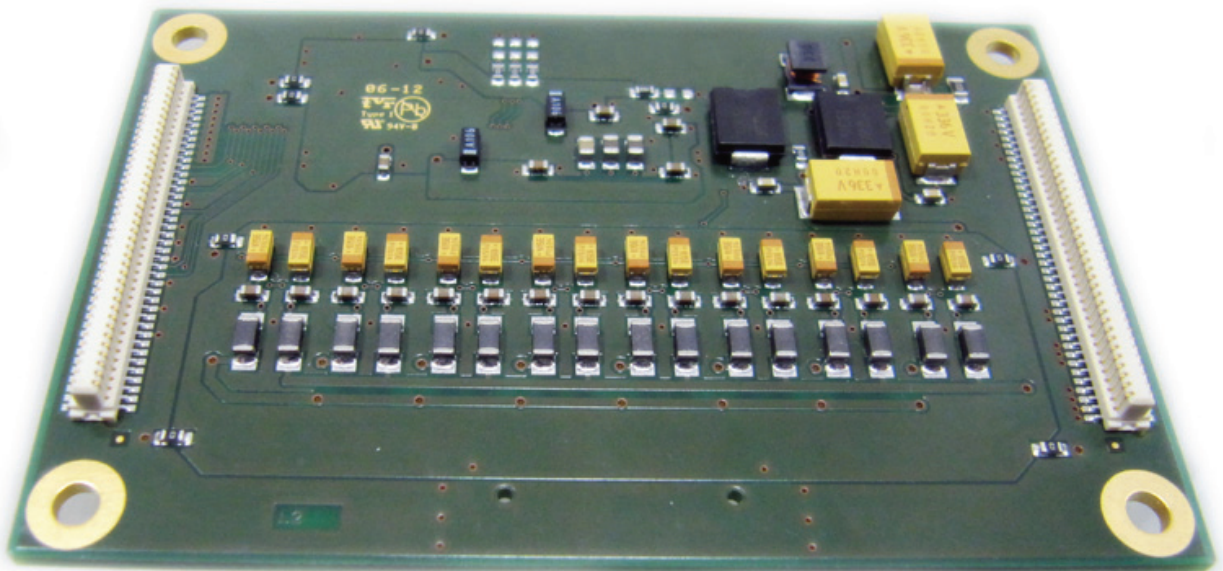


DI-6X SYNC

Analog to Digital converter component for DI-6X main board



DI-6X SYNC is a very flexible **XILINX** based platform for a wide range of applications. The Ultimate **XILINX VirtexVI** with different high speed connections allows **DI-6X SYNC** to be the right platform for the next generation of equipments.

The **DI-6X SYNC** is an 18-bit, 8-channel, true differential, simultaneous sampling analog-to-digital data acquisition system (DAS). The part contains analog input clamp protection, a second-order antialiasing filter, a track-and-hold amplifier, an 18-bit charge redistribution successive approximation analog-to-digital converter (ADC), a flexible digital filter, a 2.5 V reference and reference buffer, and high speed serial and parallel interfaces.

The **DI-6X SYNC** operates from a single 5 V supply and can accommodate ± 10 V and ± 5 V true bipolar differential input signals while sampling at throughput rates up to 200 kSPS for all channels. The input clamp protection circuitry can tolerate voltages up to ± 16.5 V. The **DI-6X SYNC** has 1 M Ω analog input impedance regardless of sampling frequency.

The single supply operation, on-chip filtering, and high input impedance eliminate the need for driver op amps and external bipolar supplies.

The **DI-6X SYNC** antialiasing filter has a -3 dB cutoff frequency of 32 kHz and provides 40 dB antialias rejection when sampling at 200 kSPS. The flexible digital filter is pin driven, yields improvements in SNR, and reduces the -3 dB bandwidth.

The **DI-6X SYNC** is a very low power, fully differential precision input amplifier with integrated gain resistors for unity gain. It is an ideal choice for driving low power, high performance ADCs as a single-ended-to-differential or differential-to-differential amplifier. It provides a precision gain of 1, common-mode level shifting, low temperature drift, and rail-to-rail outputs for maximum dynamic range.

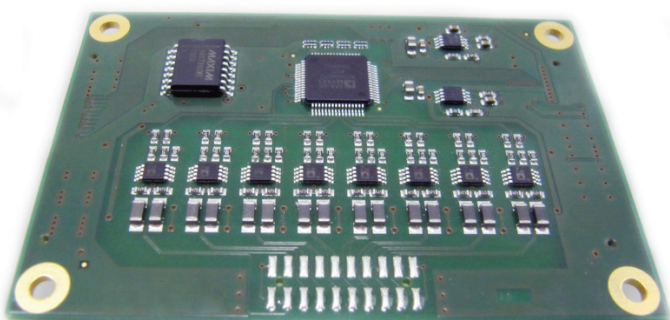
The **DI-6X SYNC** also provides overvoltage protection from large industrial input voltages up to ± 23 V while operating on a dual 5 V supply. Power dissipation on a single 5 V supply is only 1.5 mW.

Features

- Extremely low harmonic distortion
 - 126 HD2 at 10 kHz
 - 128 HD3 at 10 kHz
- Fully differential or single-ended inputs/outputs
- Differential output designed to drive precision ADCs
- Drives switched capacitor and Σ - Δ ADCs
- Rail-to-rail outputs
- VO_{CM} pin adjusts output common mode
- Robust overvoltage up to 18 V beyond supplies
- High performance
- Suitable for driving 16-bit converter up to 250 kSPS
- 39 nV/ $\sqrt{\text{Hz}}$ output noise
- 1 ppm/ $^{\circ}\text{C}$ gain drift maximum
- 200 μV maximum output offset
- 10 V/ μs slew rate

Applications

- Power line monitoring and protection systems
- Multiphase motor control
- Instrumentation and control systems
- Multiaxis positioning systems
- Data acquisition systems (DAS)
- ADC driver
- Differential instrumentation amplifier building block
- Single-ended-to-differential converter



DI-6X SYNC (side B)