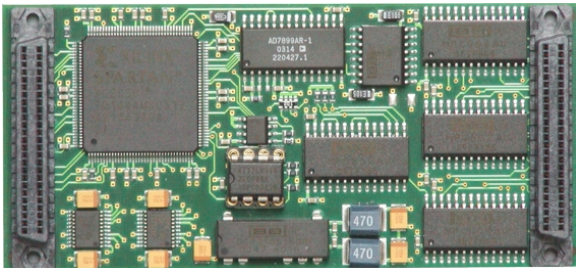# TIP845 48 Channel of 14 bit A/D Conversion

Application Information

The TIP845 is an IndustryPack® compatible module providing 48 single-ended or 24 differential ADC input channels. The data acquisition and conversion time is up to 2.5µs without channel / gain change and up to 10.5µs with channel / gain change. The resolution is 14 bit.

The input multiplexer of the A/D circuit offers analog overvoltage protection of up to 70Vpp. A programmable gain amplifier allows gains of 1, 2, 4 or 8 resulting in input voltage ranges of +/-10V, +/-5V, +/-2.5V or +/-1.25V.

Additionally the TIP845 provides a sequencer to control the analog inputs without wasting CPU time. Each of the A/D channels can be independently enabled and configured by a sequencer instruction RAM. After the last instruction of a programmed sequence has completed, the ADC data of all enabled channels are stored in the data RAM. The repeat frequency of the sequencer can be programmed by using the sequence timer. The sequence timer is programmable from 100µs to 6.5535s in steps of 100µs. The sequencer starts a new sequence whenever the timer reaches the programmed value. A special function is the sequencer continuous mode. It is activated by setting the sequence timer register to 0. In this mode the sequencer will start again with the first instruction of the sequence as soon as the last instruction of the previous sequence has been completed.
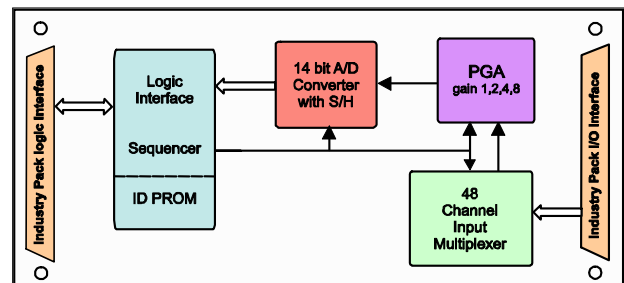

An interrupt can be generated at end-of-settling, end-of-conversion or end-of-sequencer cycle supporting an 8 bit vector.

Each TIP845 is factory calibrated. The calibration information is stored in the Identification-PROM unique to each IP.

For First-Time-Buyers the Engineering Documentation TIP845-ED is recommended. The Engineering Documentation includes TIP845-DOC, schematics and data sheets of TIP845.

Technical Information

- ❍ Interface according to IndustryPack specification
- ❍ Identification-PROM supports auto-configuration
- ❍ Single Size IndustryPack
- ❍ Up to 48 single-ended or 24 differential ADC input channels
- ❍ 70Vpp overvoltage protection
- ❍ Programmable Gain Amplifier with gain 1, 2, 4 or 8 Input voltage range
  - ❍ gain = 1: +/-10V
  - ❍ gain = 2: +/-5V
  - ❍ gain = 4: +/-2.5V
  - ❍ gain = 8: +/-1.25V
- ❍ 14 bit A/D converter with internal S/H and reference
- ❍ On board sequencer
- ❍ Vectored interrupts
- ❍ Factory calibrated, calibration information stored in ID PROM unique to each IP
- ❍ Operating temperature -40°C to +85°C

Order Information

RoHS Compliant
TIP845-10R   48 Channel 14 bit A/D Conversion

None RoHS Compliant
TIP845-10   None RoHS compliant version of
TIP845-10R

Documentation
TIP845-DOC   User Manual
TIP845-ED   Engineering Documentation, includes
TPMC845-DOC

Software
TIP845-SW-25   Integrity Software Support
TIP845-SW-42   VxWorks Software Support
(Legacy and VxBus-Enabled Software
Support)
TIP845-SW-65   Windows XP/XPE/2000 Software
Support
TIP845-SW-72   LynxOS Software Support
TIP845-SW-82   LiNUX Software Support
TIP845-SW-95   QNX 6 Software Support
For other operating systems please contact TEWS.

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