TPMC500 32 Channels of Isolated 12 bit A/D

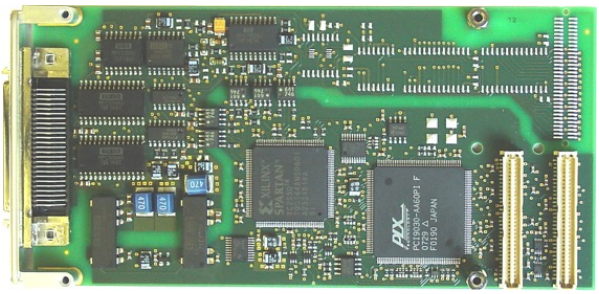
Application Information

The TPMC500 is a PCI Mezzanine Card compatible module providing galvanically isolated 32 multiplexed 12 bit ADC with on board DC/DC converters. The data acquisition and conversion time is mode-dependent: Maximum 10µs without channel / gain change, maximum 12.5µs with channel / gain change.

The 32 ADC input channels can be software configured to operate in single-ended or differential mode with 16 input channels. The mixed mode is possible e.g. channel 1 to channel 8 selected as differential inputs and channel 9 to channel 16 and channel 25 to channel 32 as single-ended input channels.

The ADC multiplexer is overvoltage protected up to 70Vpp. A programmable gain amplifier allows gains of 1, 2, 5, 10 (TPMC500-10x, -12x, -20x and –22x) and 1, 2, 4, 8 (TPMC500-11x, -13x, -21x and –23x). The full-scale input voltage range is +/-10V for the TPMC500-1x0, -11x, -20x, -21x and 0V to 10V for the TPMC500-12x, -13x, -22x, -23x (for a gain of 1).

Additionally the TPMC500 provides a sequencer to control the analog inputs without wasting CPU time. Each channel can be independently enabled and configured by a sequencer instruction RAM. After the last instruction of a programmed sequence has been completed the ADC data of all channels enabled for the sequence 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 6.5535sec in steps of 100µs. Whenever the timer reaches the programmed value the sequencer starts a new sequence. A special function is the sequencer continuous mode. It is activated, if the sequence timer register is set 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.

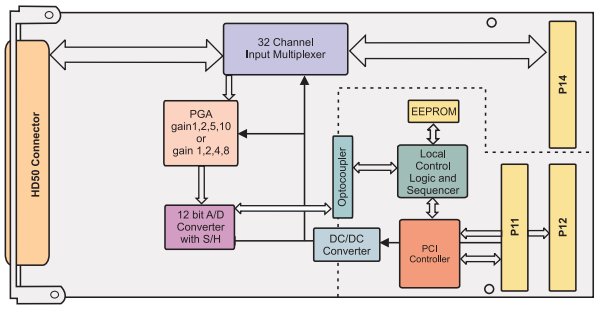
Each TPMC500 is factory calibrated. The calibration data is stored in an EEPROM unique to each TPMC500.

For First Time Users the Engineering Documentation TPMC500-ED is recommended. The Engineering Documentation includes TPMC500-DOC, schematics and data sheets.

Software support (TPMC500-SW-xx) is available for different operating systems.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- PCI 2.1 compliant interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 149 mm x 74 mm
- 32 single-ended or 16 differential channels of isolated 12 bit A/D conversion
- Acquisition and conversion time up to 10 µs without and up to 12.5 µs with channel / gain change
- ESD protected input multiplexer
- Programmable gain amplifier: gain 1, 2, 5, 10 or 1, 2, 4, 8
- 12 bit A/D converter with internal S/H and reference
- Full-scale input range +/-10V at gain 1
- Interrupt capability at end-of-conversion
- Factory calibrated, calibration information stored in EEPROM



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Order Information

RoHS Compliant

TPMC500-10R	32 Single-ended or 16 Differential Channels of Isolated 12 bit A/D, gain 1, 2, 5, 10, input range +/- 10V, front panel I/O
TPMC500-11R	Same as TPMC500-10R but programmable gain of 1, 2, 4, 8
TPMC500-12R	Same as TPMC500-10R but 0-10V inputs
TPMC500-13R	Same as TPMC500-10R but programmable gain of 1, 2, 4, 8 and 0-10V inputs
TPMC500-20R	Same as TPMC500-10R but P14 I/O
TPMC500-21R	Same as TPMC500-11R but P14 I/O
TPMC500-22R	Same as TPMC500-12R but P14 I/O
TPMC500-23R	Same as TPMC500-13R but P14 I/O

None RoHS Compliant

TPMC500-10	None RoHS compliant version of TPMC500-10R
TPMC500-11	None RoHS compliant version of TPMC500-11R
TPMC500-12	None RoHS compliant version of TPMC500-12R
TPMC500-13	None RoHS compliant version of TPMC500-13R
TPMC500-20	None RoHS compliant version of TPMC500-20R
TPMC500-21	None RoHS compliant version of TPMC500-21R
TPMC500-22	None RoHS compliant version of TPMC500-22R
TPMC500-23	None RoHS compliant version of TPMC500-23R

Documentation

TPMC500-DOC	User Manual
TPMC500-ED	Engineering Documentation, includes TPMC500-DOC

Software

TPMC500-SW-25	Integrity Software Support
TPMC500-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC500-SW-65	Windows XP/XPE/2000 Software Support
TPMC500-SW-72	LynxOS Software Support
TPMC500-SW-82	LiNUX Software Support
TPMC500-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA301	Cable Kit for modules with HD50 connector
TPIM001	PIM I/O Module with HD50 SCSI-2 type connector

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