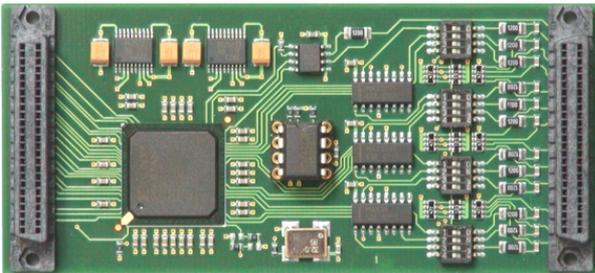


### TIP116 4 Channel Quadrature / General Purpose Counter

#### Application Information

The TIP116 IndustryPack<sup>®</sup> compatible module is primarily designed for motion control applications, but it is also applicable as general purpose counter.

The TIP116 offers four channel quadrature / general purpose counter. Each channel consists of a 32 bit programmable counter, a 32 bit preload register, a 32 bit compare register and a 32 bit output latch. The 32 bit counter can be programmed for quadrature, up-/down or direction count. In quadrature count mode the counter is programmable for single, double and quadruple analysis of the encoder signals. Two special count modes are available, a cycling 'Divide-by-N' mode and a 'Single-Cycle' mode.



Additionally four control modes are available via the control input. The control input can be programmed to load, latch or reset the counter or it can be used as a gate for the counter clock.

The level of the three input signals per channel can be RS422 or TTL. The input signals pass a digital filter for noise suppression before they are fed into the counter.

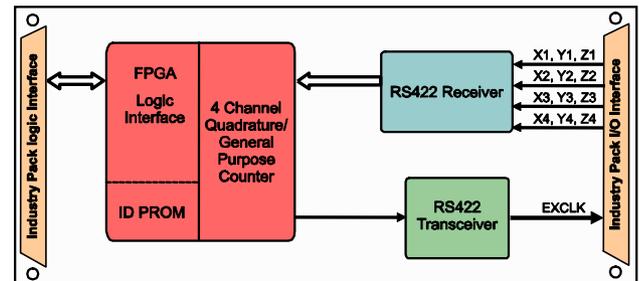
The TIP116 also provides a RS422 clock output. The clock frequency is programmable to 1, 2, 4 or 8 MHz.

A 16 bit down-counter with preload register allows timing intervals of up to 65ms. It can be used as reference timer for closed loop applications.

For First-Time-Buyers the Engineering Documentation TIP116-ED is recommended. The Engineering Documentation includes TIP116-DOC, schematics and data sheets of TIP116.

#### Technical Information

- Interface according to IndustryPack specification
- Identification-PROM supports auto-configuration
- Single Size IndustryPack
- Four 32 bit counter, each with:
  - 32 bit preload register
  - 32 bit comparator register
  - 32 bit latched output register
  - Up/down, direction or quadrature count
  - 1x, 2x or 4x resolution multiplier (quadrature count)
  - Divide-by-N, Single Cycle counting modes
  - Programmable control input with 4 additional control modes
- Vectored interrupt
- DC to 4 MHz count frequency
- Inputs TTL/RS422 compatible
- Programmable RS422 clock output
- 16 bit down-counter with preload
- Operating temperature -40°C to +85°C



### Order Information

#### RoHS Compliant

**TIP116-10R** Four channel quadrature / general purpose counter

#### None RoHS Compliant

TIP116-10 None RoHS compliant version of TIP116-10R

#### Documentation

**TIP116-DOC** User Manual

**TIP116-ED** Engineering Documentation (TIP116-DOC, Schematics, Assembly Drawing, Data Sheets)

#### Software

**TIP116-SW-25** Integrity Software Support

**TIP116-SW-42** VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

**TIP116-SW-65** Windows XP/XPE/2000 Software Support

**TIP116-SW-72** LynxOS Software Support

**TIP116-SW-82** LiNIX Software Support

**TIP116-SW-95** QNX 6 Software Support

For other operating systems please contact TEWS.