



TR122 Two Channel 12-Bit 200 MS/s Transient Recorder

Data Design Corporation

Gaithersburg, MD

The TR122 Transient Recorder is a high performance two channel transient waveform digitizing instrument in a single slot 3U Compact PCI module, capable of digitizing to 12 bits at rates up to 200 MS/s on each channel independently. Each channel includes an independent analog front end and analog-to-digital converter, providing superior interchannel isolation and full bandwidth availability on all channels. The TR122 and included software provide a turn key transient measurement solution, while included software source code and drivers provide powerful system level integration options.

Principal Features

- **200 MS/s sample rate**
- **12-Bit resolution**
- **Two million sample static memory per channel**
- **100 MHz bandwidth**
- **Low noise operation**
- **1 M Ω Input Impedance**
- **Input ranges ± 0.5 volts to ± 250 volts in 9 ranges**
- **Full scale offset adjustment**
- **Analog triggering from either channel or external trigger**
- **Programmable post trigger sample count**

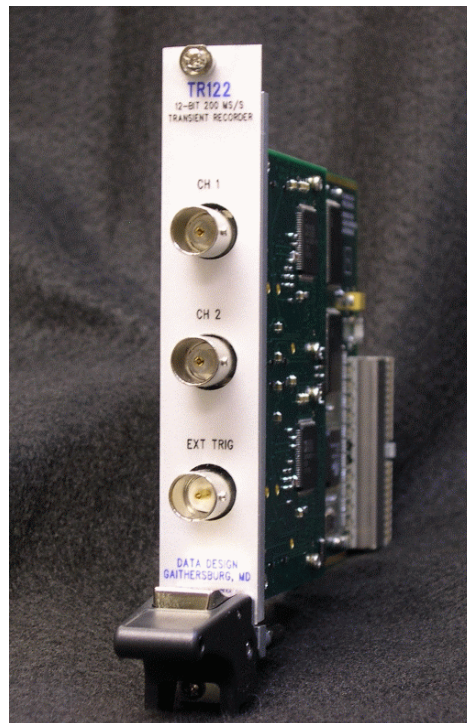
Samples are recorded to a circular buffer which stops filling after recording a specified number of samples after the trigger event. This feature allows for adjustment of recording capacity for the level of interest in samples before the trigger event.
- **Segmentable memory**

A segmented memory architecture and internal timer allow multiple sequential events to be captured and time stamped without the need to read data between events. The sample memory is divisible into segments of as little as 64 KSamples. The internal timer is used to record a count with each trigger event which can be used to determine the relative time of multiple trigger events.
- **Turnkey transient recorder software for Windows**

The software provides an oscilloscope look and feel for a familiar and easy start to transient recorder operation with one or multiple modules. The application coexists seamlessly with other instrument system components and can often be used as the only interface to the transient recorder.
- **Fully documented API provided as a Windows DLL**

The API can be directly accessed from programming environments such as C, Visual Basic, and LabView for adaptation to a larger instrument system.
- **Software source code provided**

All software is provided with source code for the possibility of adaptation to other environments or addressing custom applications. The API is written in C and the application layer is written in Visual Basic. The source code can be helpful in understanding the API layer for adaptation to other application programming environments.





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Specifications Summary

Dataway Interface

Compact PCI at 32 Bits and 33 MHz
Compliant with PICMG 2.0 R3.0
Single Width 3U Compact PCI Card

Sample Rate

200 MS/s All Channels
100 MHz Bandwidth

Input Channel Architecture

2 Independent Analog Signal Inputs
1 External Trigger Input

Analog Input Characteristics

Single Ended DC Or AC Coupled
Full Scale Offset 10-Bit Resolution
1 M Ω 20 pF Or 50 Ω Impedance

External Trigger Input

Single Ended DC Coupled
1 K Ω 20 pF

Ambient Temperature Range

0 To 70 C

Memory

2 MSample Per Channel
64 KSample Minimum Block Size
Configurable Segmenting

Input Sensitivity

12-Bit Resolution
1-500 Volts Full Scale In 9 Ranges
0.05% Accuracy (10 LSB)
80 dB Minimum Interchannel Isolation

Input Withstand Rating

1 M Ω Input \pm 250 VDC
50 Ω Input 4 Watts (14 Volts RMS)

Trigger Input Sources

Channel Greater Than Full Scale Range
External -10V To +10V 10-Bit Resolution
Rising Or Falling Edge

Software Features

Turnkey, out of the box operation of all instrument features in an familiar, uncluttered interface

Storage oscilloscope operation for fast setup of the instrument environment

- Auto/Normal/Single trigger modes
- Quickly set trigger source and input range
- On screen offset and trigger level adjustment
- 8 to 12 bit viewing modes

Transient recorder operation provides the full TR122 feature set

- Sample rate control
- Memory segmentation and depth settings
- Memory profiling and time readouts make it easy to examine deep memory

