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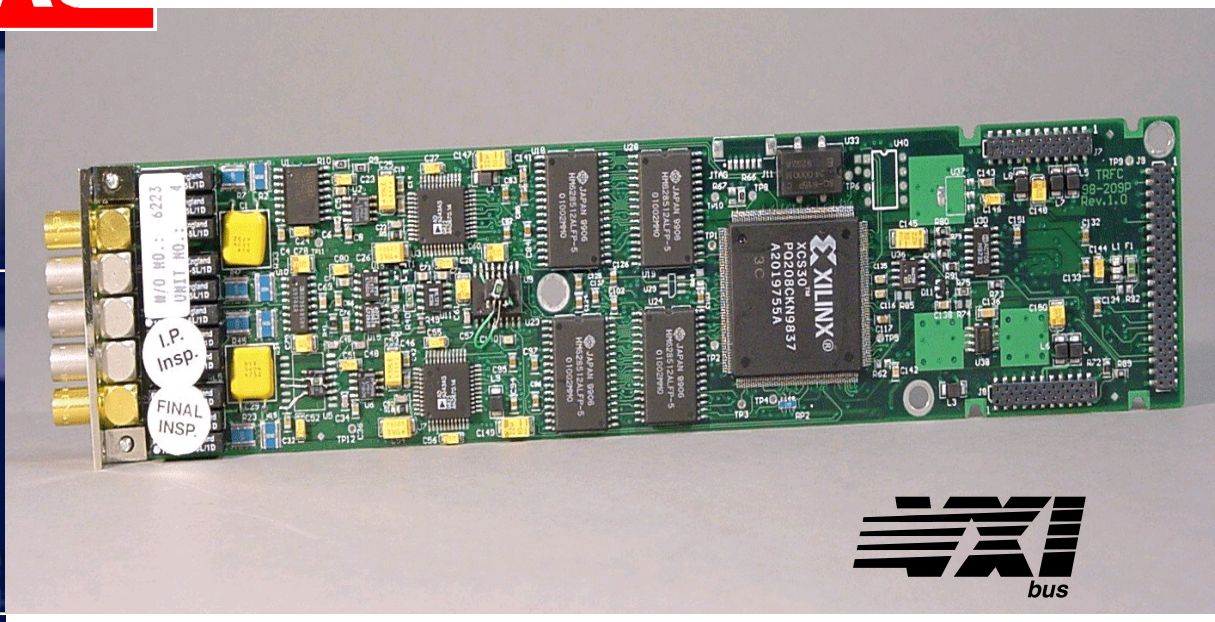
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ProDAQ

ADVANCED VXI DATA ACQUISITION SYSTEMS

3450

TRANSIENT RECORDER FUNCTION CARD



- 2 channels
- 14-bit resolution
- 3 MHz Conversion Rate
- External or internal sampling clock
- Dual timebase operation with optional ProDAQ 3451 card
- Segmentable memory
- 512 kSample memory per channel
- Freely configurable post/pre-trigger ranges
- Optional battery back-up
- Extensive trigger capabilities
- Programmable gain
- Offset correction

POWER

The ProDAQ 3450 Transient Recorder Function Card is a two channel waveform digitizer. It is one of a range of function cards designed to provide full functionality when installed within one of the ProDAQ Motherboard Modules.

The Transient Recorder Function Card features simultaneous sampling with 14-bit resolution and 3 MSamples/sec. maximum sampling rate. The Transient Recorder Function Card has 512 kSamples of memory per channel with optional battery back-up. The memory can be configured into smaller blocks called segments. Each segment is then treated as an independent waveform memory and needs its own trigger to start post-trigger recording. Segments can be freely divided into pre- and post-trigger sections.

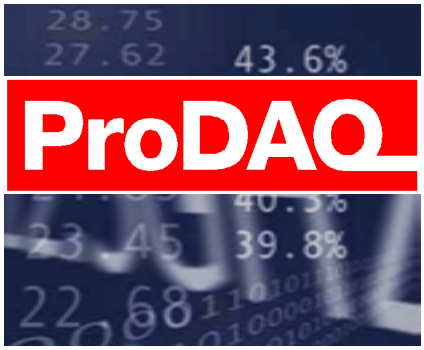
A trigger can be received from the VXIbus or from the front-panel trigger input or can be derived from the input signal. There are two trigger modes related to the input signal: positive/negative slope or positive/negative slope with hysteresis.

The ProDAQ 3450 Transient Recorder Function Card has an online channel monitoring possibility. During recording, access to the memory is reserved for the ADC data (single-ported memory). A monitoring register gives a possibility of reading the current values of the sampled signal without interrupting the recording.

The ProDAQ 3450 Transient Recorder Function Card can work either in stand-alone mode or controlled by a ProDAQ 3451 Trigger/Clock Function Card. In the later case the Trigger/Clock Function Card generates the sampling clock and distributes the trigger signals to/from the Transient Recorder Function Cards. The sampling clock and trigger signals are routed through either the VXIbus trigger lines or externally via front-panel cable connections.

The Trigger/Clock Function Card stores the information about segment-to-segment timing. This information can be used to reconstruct the timing of a waveform stored in several segments. The sampling clock generated by the Trigger/Clock Function Card is derived either from an on-board oscillator or from an external source. In the case of the on-board oscillator the user can use a powerful dual time base mode which defines different sampling frequency for pre-trigger, near post-trigger and far post-trigger recording.

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The dual timebase option allows the memory to be used more efficently by changing the sampling clock frequency. The input signal can be sampled at different speeds. Low-speed sampling and high-speed sampling can be used for parts of the input signal of low and high interest, respectively. Dual timebase option requires the post-trigger section to be divided into a near post-trigger section and a far post-trigger section. The sampling frequency is changed when going from pre-trigger to post-trigger and/or from near post-trigger to far post-trigger. The dual time base mode is only available in Trigger/Clock Function Card controlled mode.

ProDAQ modules provide compability with all current popular software environments and allow users to safely and simply expand their existing hardware and software systems.

The supplied driver automatically detects and initializes all function cards installed into a ProDAQ Motherboard Module, removing any possibility of configuration errors.

The ProDAQ 3450 Transient Recorder Function Card is supplied with VXI*plug&play* drivers for the WIN95 and WINNT frameworks.

Ordering Information

3450-AA	2 Ch., 3 MHz Transient Recorder Function Card

Related Products:

3120-AA	Standard Motherboard
3150-AA	High-Performance Motherboard
3451-AA	Transient Recorder Timer Card

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Bustec Production Ltd.
World Aviation Park
Shannon, Co. Clare
Rep. of Ireland
t +353 61 707 100
f +353 61 707 106
e sales@bustec.ie

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Input Channels	2
Input Type	Single-ended
Coupling	DC, AC, Input grounded
Input Impedance	50Ω or 1MΩ for both DC and AC coupling
AC Coupling	4.7μF/50V in series with input signal
Max. Input Voltage	±10V DC@ 50Ω termination ±50V DC@ 1MΩ termination
Input Range	0 . . . +5.000V @ gain = 1 0 . . . +2.500V @ gain = 2 0 . . . +1.250V @ gain = 4 0 . . . +0.625V @ gain = 8
Offset Range	±2.5V, 12-bit resolution
Analog Bandwith (-3dB)	1.5 MHz @ gain = 1 1.4 MHz @ gain = 2 1.0 MHz @ gain = 4 0.5 MHz @ gain = 8
Accuracy	
Offset error	±1.22mV with offset subtraction ±20mV max. without
Gain error	±1.5% FSR
Nonlinearity	±2.5LSB
No missing codes	14-bit guaranteed
Sampling	
Sampling Rate	1kHz - 3MHz
ADC Resolution	14 bit
Clock Source	Internal on-board generator External trough front-panel connector or VXI backplane
Internal Sample Clock	1kHz - 3MHz
TRFC Oscillator	
Stability	±100ppm
Rate Steps	1-2-3-5-7.5
MB Oscillator	
Stability	depending on MB model
Rate Steps	1-2-2.5-5
External Sample Clock	
Frequency Range	1kHz - 3MHz
Duty Cycle	45% to 55%
Standard Levels	ECL, ECL shifted to 0V, TTL
Threshold Levels	-1.3V, +0.7V, +1.5V
Termination	50Ω to -2V, 50Ω to GND, none
External Sample Clock Output	
Level	ECL (without pulldown resistor)
Trigger Input	
Level	TTL
Termination	50Ω to GND, none
Min. Pulse	50ns
Active Edge	programable

Trigger Input	
Level	TTL
Termination	50Ω to GND, none
Min. Pulse	50ns
Active Edge	programable
Input Signal Trigger	
Threshold Resolution	8MSBs of ADC
Modes	pos./neg. slope, hysteresis
Memory	
Size	512 kSamples/channel
Backup Option	Alkaline battery
Segment Sizes	512 kS (max. 1 Seg.) 256 kS (max. 2 Seg.) 128 kS (max. 4 Seg.) 64 kS (max. 8 Seg.) 32 kS (max. 16 Seg.)
Post Trigger	Variable from 8 samples to full memory in steps of 8 Samples. Common for both channels.
Data Format	Binary with out-of-range indicator Two's complement with out-of-range indicator Two's complement signed extended to 16 bit
Power Consumption	Voltage (V) / Current (mA) +15 / 25 -15 / 15 +12 / 60 -12 / 15 +5 / 350 -5.2 / 50 -2 / 5 (Note: ±15V are derived from ±24V by a regulator on the motherboard)
Power Consumption	< 4 W
Connectors	LEMO type
Analog Input	ELP.00.250.DTN (gold plated)
Digital I/O	ELP.00.250.NTN (nickel plated)
Dimensions	235 x 53mm (2.1 x 9.1 inch)
Weight	< 110g
Operating Temperature	0° C to 50° C
Storage Temperature	-40° C to 70° C
Warm-up Time	< 30 Min.
Software Support	VXI*plug&play* driver for the WIN95 and WINNT frameworks
Configuration	Cards can be factory installed or field installed by user
Warranty Period	12 month standard (Extended periods available at additional cost)

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