

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 mem-

ory 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.



The dual timebase option allows the memory to be used more efficiently 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

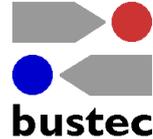
3450-AA 2 Ch., 3 MHz Transient Recorder Function Card

Related Products:

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

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Input Channels	2	Trigger Input Level	TTL																
Input Type	Single-ended	Termination	50Ω to GND, none																
Coupling	DC, AC, Input grounded	Min. Pulse	50ns																
Input Impedance	50Ω or 1MΩ for both DC and AC coupling	Active Edge	programmable																
AC Coupling	4.7μF/50V in series with input signal	Input Signal Trigger																	
Max. Input Voltage	±10V DC@ 50Ω termination ±50V DC@ 1MΩ termination	Threshold Resolution	8MSBs of ADC																
Input Range	0 ... +5.000V @ gain = 1 0 ... +2.500V @ gain = 2 0 ... +1.250V @ gain = 4 0 ... +0.625V @ gain = 8	Modes	pos./neg. slope, hysteresis																
Offset Range	±2.5V, 12-bit resolution	Memory																	
Analog Bandwidth (-3dB)	1.5 MHz @ gain = 1 1.4 MHz @ gain = 2 1.0 MHz @ gain = 4 0.5 MHz @ gain = 8	Size	512 kSamples/channel																
Accuracy		Backup Option	Alkaline battery																
Offset error	±1.22mV with offset subtraction ±20mV max. without	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.)																
Gain error	±1.5% FSR	Post Trigger	Variable from 8 samples to full memory in steps of 8 Samples. Common for both channels.																
Nonlinearity	±2.5LSB	Data Format	Binary with out-of-range indicator Two's complement with out-of-range indicator Two's complement signed extended to 16 bit																
No missing codes	14-bit guaranteed	Power Consumption	<table border="1"> <tr> <th>Voltage (V)</th> <th>Current (mA)</th> </tr> <tr> <td>+15</td> <td>25</td> </tr> <tr> <td>-15</td> <td>15</td> </tr> <tr> <td>+12</td> <td>60</td> </tr> <tr> <td>-12</td> <td>15</td> </tr> <tr> <td>+5</td> <td>350</td> </tr> <tr> <td>-5.2</td> <td>50</td> </tr> <tr> <td>-2</td> <td>5</td> </tr> </table> (Note: ±15V are derived from ±24V by a regulator on the motherboard)	Voltage (V)	Current (mA)	+15	25	-15	15	+12	60	-12	15	+5	350	-5.2	50	-2	5
Voltage (V)	Current (mA)																		
+15	25																		
-15	15																		
+12	60																		
-12	15																		
+5	350																		
-5.2	50																		
-2	5																		
Sampling		Power Consumption	< 4 W																
Sampling Rate	1kHz - 3MHz	Connectors																	
ADC Resolution	14 bit	Analog Input	LEMO type ELP.00.250.DTN (gold plated)																
Clock Source	Internal on-board generator External trough front-panel connector or VXI backplane	Digital I/O	ELP.00.250.NTN (nickel plated)																
Internal Sample Clock	1kHz - 3MHz	Dimensions	235 x 53mm (2.1 x 9.1 inch)																
TRFC Oscillator		Weight	< 110g																
Stability	±100ppm	Operating Temperature	0° C to 50° C																
Rate Steps	1-2-3-5-7.5	Storage Temperature	-40° C to 70° C																
MB Oscillator		Warm-up Time	< 30 Min.																
Stability	depending on MB model	Software Support	VXi <i>plug&play</i> driver for the WIN95 and WINNT frameworks																
Rate Steps	1-2-2.5-5	Configuration	Cards can be factory installed or field installed by user																
External Sample Clock		Warranty Period	12 month standard (Extended periods available at additional cost)																
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	programmable																		