Binary Marker HV iso

Specifications

GEN SERIES BINARY MARKER HV ISO

Introduction

The Binary Marker HV board is a dedicated input option for GEN DAQ products. It enables to record up to 32 binary input channels (marker channels) as well as 8 digital event signals that are optically isolated with up to 1 MS/s per channel.

Although general purpose, this board is specifically suited for the high power/high voltage market. A fiber-optic isolated output is provided to present an ARM-signal that can be used to drive an external instrument like the HBM **BE3200** high-definition test sequencer or any other timing device.The ARM output is active when a continuous recording is active, or when the acquisition card is waiting for a trigger (armed) in the triggered sweep acquisition mode.

In addition, 9 binary input channels can be assigned under software control to provide 3 channels of counter/timer functionality. Each channel can have its own function.

The counter/timer functionality includes:
- General purpose up/down counter
- Frequency/RPM counter
- Quadrature/ position measurements

The counter/timer functionality uses up to 3 event bits per channel. These event bits also keep their original functionality. E.g. you can use a quadrature encoder and at the same time look at the quadrature signals separately.

The HBM *Perception* software provides integrated display and control of the event channels, that are recorded in parallel with the analog channels.

A full range of features is available for each channel seperately to make the best use of the event channels.

Settings include name, units, invert, and storage on/off.

In addition each event channel can be used as a trigger condition, a qualifier or an alarm. Each of these conditions can be set to either positive/negative or high/low active.

This combination of features gives you the capability to create complete "bit patterns" to be used as trigger or qualifier.

Note: The Counter/timer channels cannot be used for triggering nor alarm.

General

# of channels	8 fiber-optic isolated marker (event) inputs; 32 non isolated marker (event) inputs; 1 fiber-optic isolated ARM output
Counter/timer	3 channels, providing:
	• up/down counter
	• Frequency/RPM count
	• Quadrature measurement
Sample rate	1 MS/s
Memory	512 MByte total;

The memory splits between marker inputs and counter/timers channels.

Usable memory is:
  Markers enabled only (1-40)
     -> 64 MSamples
  Markers plus 1 counter chn enabled
     -> 32 MSamples
  Markers plus 2 counter chn enabled
     -> 20 MSamples
  Markers plus 3 counter Chn enabled
     -> 16 MSamples

Non-isolated inputs

Input type	TTL, active low with pull-up resistor to enable activation by relais or short-circuit to ground
Pull-up	25.5 kΩ @ 5 Volt
Output power	0.3 A maximum
Input range	TTL compatible, 30 V maximum
Hysterese	1.3 V
Treshold	- 28 V to + 0.7 V = '0' + 2 V to + 28 V = '1'
Protection	± 30 V continuous
Connectors	two 26-pin SubD type connectors with 16 events per connector
Type	KF66-A26P-N

Fiber-optic I/O

Sockets	**Input:** HP HFBR-2523 **Output:** HP HFBR-1523 (660 nm LED)
Connectors	HP HFBR-4503 simplex latching connector
Output drive	60 to 100 meter
Compatibility	fully compatible with HBM BE3200 Test Sequencer

Fiber-optic cable (recommended)

Type	plastic, single step index, HP HFBR-RXXYYY series
Diameter	core and cladding: 1.00 mm
Attenuation	0.22 dB/m
Delay	propagation delay constant: 5.0 ns/m

The Binary Marker HV board is a special solution developed for HighPower/High Voltage applications.

32+8 MARKERS
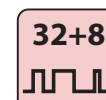
64-bit COUNTER

FREQ./RPM

QUADRATURE
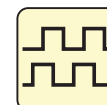
Use fiber-optic cables for full isolation and measure with complete confidence.

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Conditional functionality (markers only)

Modes	trigger, qualifier, alarm
Trigger	**modes:** off, rising edge active, falling edge active **combination:** each event trigger is OR-ed with all other trigger sources
Qualifier	**modes:** off, active high/low **combination:** each event qualifier is AND-ed with all other qualifier sources
Alarm	**modes:** off, active high, active low

Output functionality

ARM (status)	active when continuous recording active, or armed in triggered sweep mode

Counter/timer functionality

Timer/Counter

# of channels	3
# of pins/channel	3 (Eventbits 53 to 64)
Function	• Clock • Direction • Reset
Sample size	64 Bits (8 Bytes)
Operation modes	• Counter • Quadrature counter • RPM • Frequency

Counter mode

Count size	64 bits
Max frequency	10 MHz
Direction	Up/Down by external pin
Reset to "0"	• Manual by user • At start of Recording • By reset pin once after start of recording • By reset pin always

Quadrature Counter mode

Count size	64 bits
Max frequency	10 MHz
Quadrature	Up/Down by phase of signals
Reset to "0"	• Manual by user • At start of Recording • By reset pin once after start of recording • By reset pin always

RPM measurement

Sample size	64 bits
Max frequency	10 MHz
Direction	Positive/Negative rotation
Gate time	User selectable 1 us to 10 sec in 1, 2, 5 steps
Inaccuracy	10 nsec/gate time
Measurement	Counts and period
Pulse per rotation	User selectable
RPM	Counts/(period * pulse per rotation)

Frequency measurement

Sample size	64 bits
Max frequency	10 MHz
Direction	Positive/Negative rotation
Gate time	User selectable 1 us to 10 sec In 1, 2, 5 steps
Inaccuracy	10 nsec/gate time
Measurement	Counts and period
Frequency	Counts/period

Combine the board directly with other fibre-optic controlled equipment like the HBM BE3200 Test Sequencer.

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