

Introduction

The Binary Marker CT board CT is a dedicated binary input option for GEN DAQ products. It enables to record up to 64 binary input channels (marker channels) with up to 1 MS/s per channel. 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 and counter/timer channels, that are recorded in parallel with the analog channels. A full range of features is available for each channel separately 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 or alarm.

General

of channels 64 non-isolated marker (event) inputs

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 (1-64)**
-> 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

Inputs

Input type TTL, active low with pull-up resistor to enable activation by relays 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

Threshold - 28 V to + 0.7 V = '0'
+ 2 V to +28 V = '1'

Hysteresis 1.3 V

Protection ± 30 V continuous

Connectors four 26-pin SubD type connectors with 16 events per connector KF66-A26P-N

Type

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



The Binary Marker CT board is cost effective and provides a variety of functionality.



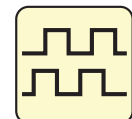
MARKERS



COUNTER



FREQ./RPM



QUADRATURE



Binary Marker CT Specifications

Counter/timer functionality

Timer/Counter

# of channels	3
# of pins/channel	3 (Eventbits 53 to 64)
Function	<ul style="list-style-type: none"> • Clock • Direction • Reset
Sample size	64 Bits (8 Bytes)
Operation modes	<ul style="list-style-type: none"> • Counter • Quadrature counter • RPM • Frequency

Counter mode

Count size	64 bits
Max frequency	10 MHz
Direction	Up/Down by external pin
Reset to "o"	<ul style="list-style-type: none"> • 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 "o"	<ul style="list-style-type: none"> • 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

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