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MA204
50MHz Pulse Generator

The MA204 is a fully programmable pulse generator that allows the generation of precisely timed pulses of programmable frequency, pulse width, delay, and amplitude. Operational modes include single, continuous, and burst functions along with double pulse capability. Extensive trigger and gating logic provides comprehensive control of pulse timing. The internal base clock can be disciplined to an external reference clock.

Overview:

Number of Channels: 1

Frequency: 0.2Hz - 50MHz

Pulse Output: -2V to +7V

Operational Modes:
- Single or continuous pulsing
- Single pulse or pulse pair
- Programmable rise/fall time
- External triggering
- Async. or sync. gating
- Burst from 2 to >4B pulses

Clock Disciplining:
Internal clock can be disciplined to a 10MHz external reference for increased accuracy and stability

Calibration:
Calibration is normally not required, however, registers are provided that allow fine adjustment of the delay times.

Inputs/Outputs:
- Front Panel Pulse Output
- Front Panel Sync Output
- Front Panel Input A
- Front Panel Input B
- M-Module Trig A
- M-Module Trig B

Gate, Trigger, Ref. Clock inputs:
Source can be the front panel A or B connectors or the MA-Module Trig A or Trig B signals

Pulse and Sync outputs:
Can be directed to the front panel connectors and to the MA-Module backplane Trig A or B signals

Front Panel Connectors: SMA

Ordering Information

Part Number

100ps timing	11028450-0001
5ns timing	11028450-0002

M Module Compliance

Complies with ANSI/VITA Std. 12-1996 for single-wide MA Modules

Data Transfers: 16 bit

Interrupts: INTA & INTC

Triggers: TRIGA & TRIGB

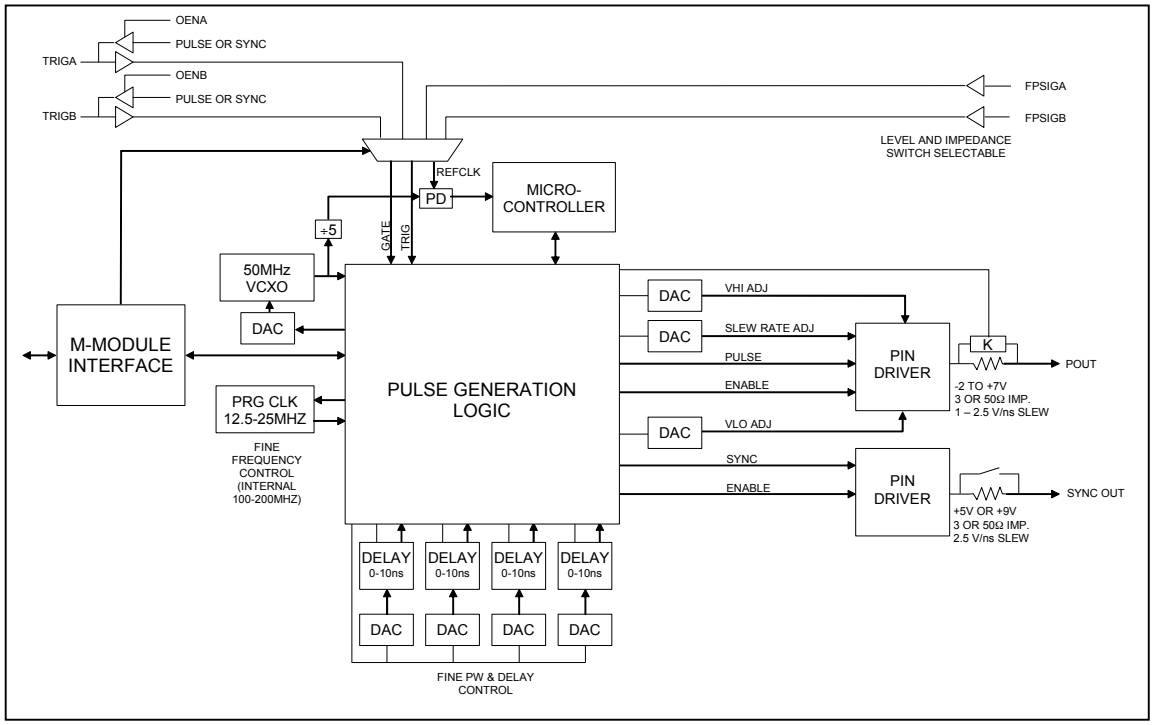
Compatible with VXI, VME, PCI, cPCI and other M Module carriers.

Applications

- Functional testing
- Design verification
- Signal simulation
- Timing control

Additional Information

User Manuals for C&H carriers and this module can be found on our website at www.chtech.com.



Specifications:

Pulse Period:

Range (internal triggering)		20ns to 5.2s
Programming Step Size		100ps
Resolution[1]	20 to 79.9ns	100ps
	80 to 159.9ns	160ps
	160 to 319.9ns	320ps
	320 to 639.9ns	640ps
	640 to 1279.9ns	1.28ns
	1280 to 4999.9ns	2.56ns
	≥ 5μs period	5ns
Accuracy (internal clock)		±(0.01% + 100ps) [2]

Pulse Width:

Range		10ns[3] to 5.2s
Prog. Resolution	-0001 version	100ps
	-0002 version	5ns
Accuracy (internal clock)		±(0.01% + 2ns) [2, 4]

Pulse Delay (from Sync Out):

Range		20ns to 5.2s
Prog. Resolution	-0001 version	100ps
	-0002 version	5ns
Accuracy (internal clock)		±(0.01% + 2ns) [2, 4]

Pulse Out Characteristics:

Range	-2.0V to +7.0V
Impedance (programmable)	3Ω or 50Ω
Prog. Resolution	25mV
Accuracy	±(2.0% + 100mV)
Output Current (source or sink)	50mA
Short Circuit Current (static)	±35mA max
Short Circuit Current (dynamic)	±100mA max
Rise/Fall Time (prog, $R_L = \infty$)	1.0 to 2.5V/ns

Input Characteristics (FPSIGA & FPSIGB):

Impedance (selectable)	56, 82, 180, or >100KΩ
Threshold (selectable)	-2.0, 0, +1.2, or +1.8V
Frequency	50MHz max
Pulse Width	10ns min

Sync Out Characteristics:

Time to un-delayed output pulse		
	-0001 version	14ns typ
	-0002 version	4ns typ
Time from external trigger		80ns max
Output Impedance (selectable)		3Ω or 50Ω
Amplitude (selectable, $R_L = \infty$)		5.0V or 9.0V
Output Current (source or sink)		50mA
Rise/Fall Time ($R_L = \infty$)		2.5V/ns typ
Pulse Width	period < 80ns	10-20ns
	period ≥ 80ns	40-80ns

Power: (-0001/-0002)

+5V	1.3A / 200ma
+12V	200ma / 170ma
-12V	200ma / 180ma

Temperature:

Operating	0°C to 50°C
Storage	-40°C to 70°C

Notes:

1. In general, the resolution is 100ps when programming a period less than 5μs; however, there are some areas that have less resolution as specified for the various ranges. See the User Manual for further details.
2. The percent accuracy can be improved by disciplining the internal clock to an external precision 10MHz reference clock. The internal clock accuracy will discipline in about 10 minutes to within one decade of the external reference, up to 10^{-8} accuracy.
3. For pulse periods < 40ns, pulse width = ½ period. For periods ≥ 40ns the minimum pulse width = 15-30ns. See User Manual for further details.
4. Use of the calibration register can improve this accuracy.