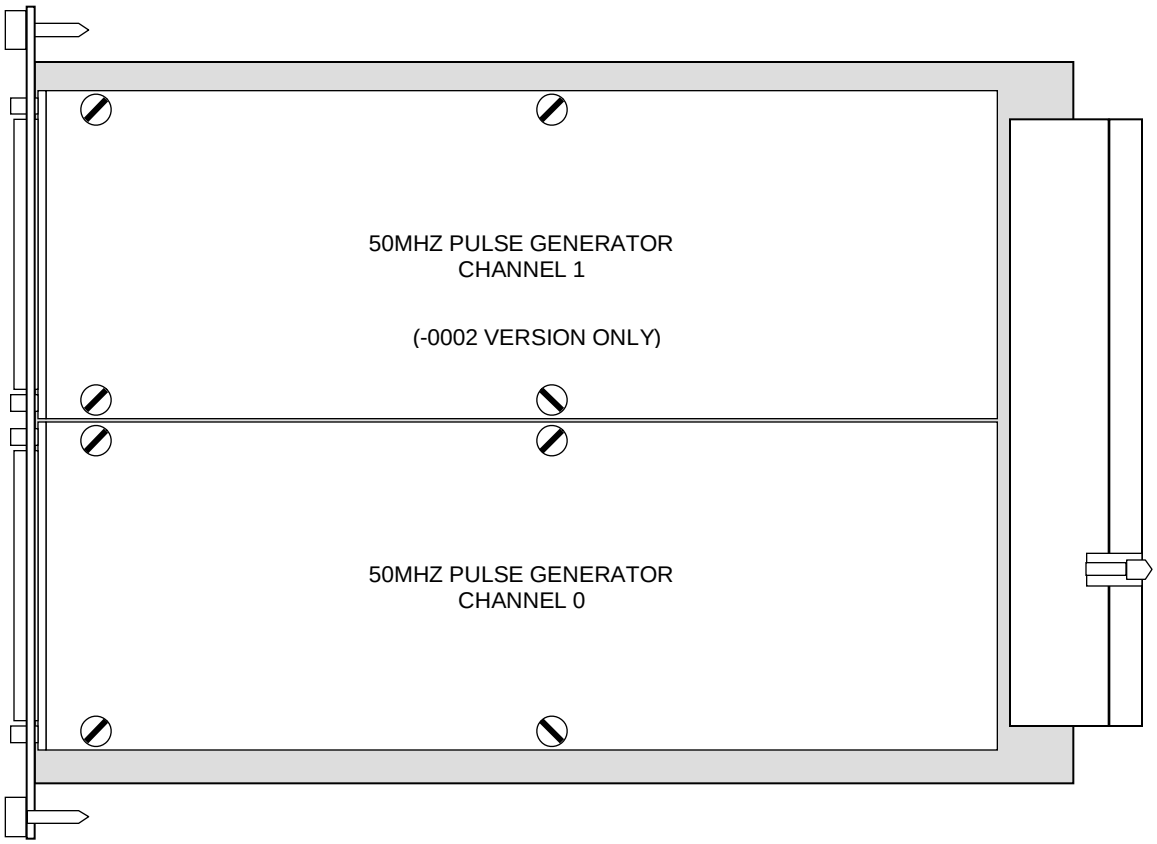
PX464S PXI 50MHz Pulse Generator

Assembly P/N 11029170

DESCRIPTION

The PX464S is a one or two channel 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.

The PX464S is an integration of one or two MA204 M-Modules and an AMi3002 PXI M-module carrier as shown below. One MA204 is used for the -0001 single channel version and two MA204's are used for the -0002 dual channel version. Each MA204 provides one 50MHz pulse output channel. The AMi3002 provides the electrical and mechanical interface to a PXI backplane and chassis.



SOFTWARE CONFIGURATION AND CONTROL

A software driver for the PX464S is available for download on C&H's website. The driver uses the VISA I/O library and includes an interactive soft front panel that can be used to operate the PX464S. The driver provides a library of function calls for initializing, configuring, and operating the instrument. The library is provided in formats for most popular development environments as well as in a Windows DLL format.

Also available for download on C&H's website is the Interactive Mezzanine Control (IMC) software. IMC is a Windows application that provides low-level access to any mezzanine module on any one of C&H's carriers. IMC can be a very useful tool during software development and debug.

SPECIFICATIONS

Number of Channels: 1 or 2

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 (each channel):

- Front Panel Pulse Output
- Front Panel Sync Output
- Front Panel Input A
- Front Panel Input B
- PXI Trigger (5)

Gate, Trigger, Ref. Clock inputs:

Source can be the front panel A or B connectors or a PXI trigger

Pulse and Sync outputs:

Can be directed to the front panel connectors and to a PXI trigger

Front Panel Connectors: SMA

ELECTRICAL

The electrical interface is compliant with the PXI bus specification Rev 2.1, cPCI Specification 2.0 R3.0, and PCI Specification 2.2 (slave only). The module supports both 5V and 3.3V signaling voltages (VIO). Five PXI compliant trigger lines are supported.

MECHANICAL

To allow the use of two M-modules in a standard 3U cPCI (PXI) system, the module is slightly higher than the 3U standard. The card guide rails for the slot the module will be used in must be replaced with the special card guide rails supplied with the PX464S. The rails easily snap out using a flat screwdriver.

ENVIRONMENTAL

Operating Temperature:	0°C to +50°C
Storage Temperature:	-40°C to +70°C
Humidity:	<95% without condensation

DOCUMENTATION

This document discusses the general use of the PX464S integrated module. For full details on each of the individual modules used in the PX464S, please refer to the User Manual for that particular module.

Document Description	Website
MA204 User Manual	www.chtech.com -> Support -> Product Manuals -> Source -> MA204
i3002 User Manual	www.acq.nl -> Products -> Carrier -> i3002-> Manual

The MA204 User Manual discusses two versions of the module. The PX464S comes configured with the -0002 (without fine delay capability) version of the MA204; therefore, use only those specifications that apply to the -0002 version of the MA204.

HARDWARE CONFIGURATION

The default MA204 Factory Switch Settings are:

Front Panel Signal A Input Threshold:	+1.8V
Front Panel Signal A Input Impedance:	50Ω
Front Panel Signal B Input Threshold:	+1.8V
Front Panel Signal B Input Impedance:	50Ω
Variable Clock:	Enabled – 100ps resolution
Fine Delay:	Disabled – 5ns resolution
Sync Out Level:	5.0V into high impedance load
Sync Out Impedance:	50Ω

SYNCHRONIZATION

The MA204 has several features that support synchronization of the channels when using the two channel (-0002) version of the PX464S.

a) If front panel external triggering is used, then synchronization can be done by simply connecting the external signal to both the front panel inputs INA0 (or INB0) and INA1 (INB1). To ensure proper impedance control, the input impedance of one MA204 should be switched to >100KΩ (high) and the other left on 50Ω.

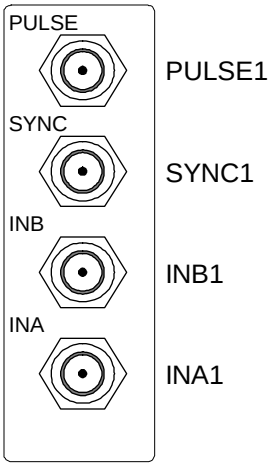
b) If backplane triggering is used, simply set both MA204's to trigger on the same backplane trigger (A or B) and on the same edge.

c) The SYNC signal of one MA204 can also be used to trigger a pulse on the other MA204. The SYNC is signal is available at the front panel connector and can be configured by software to output on the either backplane trigger A or B.

I/O CONNECTOR

Below is the signal list for the two connectors located on the front panel of the PX464S. For more details on each signal, refer to the MA204 User Manual.

Top Connector (–0002 only)



Bottom Connector