



Model 7392 Model 7492



Features

- Synchronizes four or eight separate high-speed Cobalt or Onyx I/O boards
- Synchronizes sampling and data acquisition for multichannel systems
- Synchronizes gating and triggering functions
- Clock rates up to 1.8 GHz
- Front panel MMCX connectors for input signals
- Front panel μ Sync connectors compatible with a range of Pentek Cobalt and Onyx boards

General Information

These High-Speed Synchronizer and Distribution cPCI Boards synchronize multiple Pentek Cobalt or Onyx boards within a system. They enable synchronous sampling and timing for a wide range of multichannel high-speed data acquisition, DSP, and software radio applications.

Up to eight boards can be synchronized using the 7492, with each receiving a common clock along with timing signals that can be used for synchronizing, triggering and gating functions.

Input Signals

These models provide three or six front panel MMCX connectors to accept input signals from external sources: one or two for clock, one or two for gate or trigger and one or two for synchronization signals. Clock signals can be applied from an external source such as a high performance sine-wave generator. Gate/trigger and sync signals can come from an external system source. In addition to the MMCX connector, a reference clock can be accepted through the front panel μ Sync output connectors, allowing a single Cobalt or Onyx board to generate the clock for all subsequent boards in the system.

Output Signals

These models provide up to eight front panel μ Sync output connectors, compatible

with a range of high-speed Pentek Cobalt and Onyx boards. The μ Sync signals include reference clocks, gate/triggers and sync signals and are distributed through matched cables, simplifying system design.

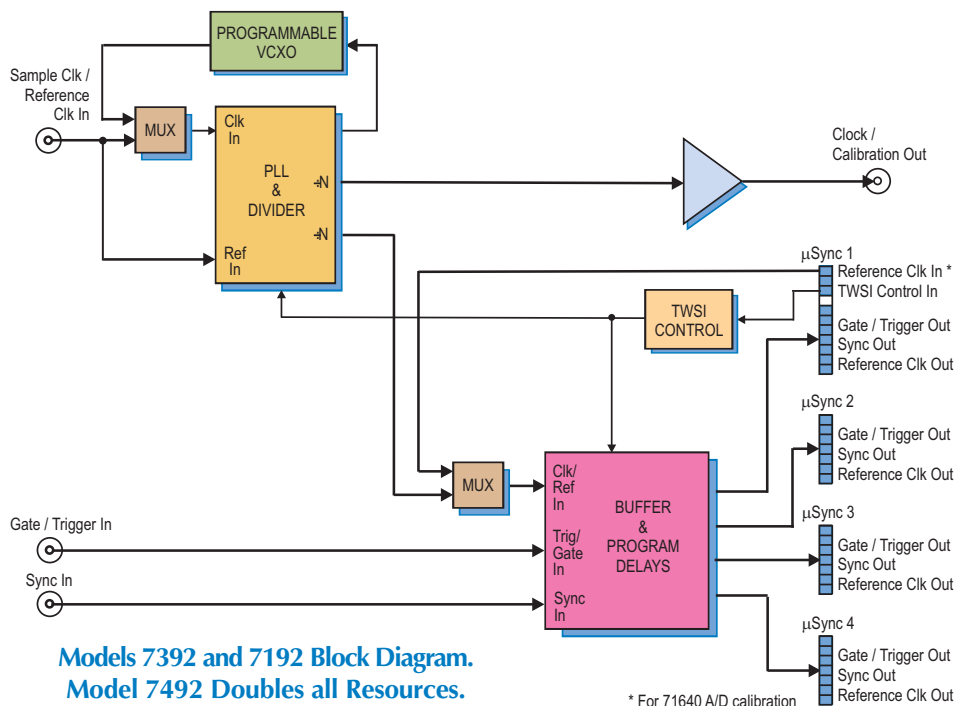
Clock Signals

These models can accept one or two user supplied external clocks on front panel MMCX connectors. As an alternative to the external clock, they can use on-board programmable voltage controlled crystal oscillators (VCXOs) as the clock sources. The VCXOs can operate alone or be locked to a system reference clock signal delivered to the front panel reference clock inputs.

The external or on-board clocks can operate at full rate or be divided and is used to register all sync and gate/trigger signals as well as providing reference clocks to all connected boards. In addition, the clocks are available at the Clock Out MMCX as sample or reference clocks for other boards in the system.

Gate and Synchronization Signals

These models feature separate inputs for gate/trigger and sync signals. Programmable delays allow the user to make timing adjustments on the gate/trigger and sync signals before they are sent to buffers for output through the μ Sync output connectors. ➤



**Models 7392 and 7192 Block Diagram.
Model 7492 Doubles all Resources.**

Calibration

These models feature a calibration output specifically designed to work with the 72640, 74640 and 73640 or 72740, 74740 and 73740 3.6 GHz A/D board and provide a signal reference for phase adjustment across multiple D/As.

Programming

These models allow programming of operating parameters including: VCXO frequency, clock dividers, and delays that allow the user to make timing adjustments on the gate and sync signals. These adjustments are made before they are sent to buffers for output through the μ Sync connectors.

These models are programmed via a TWSI control interface on the first μ Sync connector. The control interface is compatible with the front panel μ Sync connectors of all high-speed Cobalt and Onyx boards, thereby providing a single cable connection that carries both control and timing signals.

Supported Products

These models support all high-speed models in the Cobalt family including the 72630, 74630 and 73630 1 GHz A/D and D/A cPCI boards; the 72640, 74640 and 73640 3.6 GHz A/D cPCI boards; and the 72670, 74670 and 73670 Four-channel 1.25 GHz, 16-bit D/A cPCI boards. They will also support high-speed models in the Onyx family as they become available.

Specifications

Front Panel Sample Clock/Reference Input

Connector Type: MMCX

Input Impedance: 50 ohms

Input Level: 0 dBm to +10 dBm, sine wave

Sample Clock Frequency: 100 MHz to 2 GHz

Reference Frequency: 5 to 100 MHz

Front Panel Gate/Trigger & Sync Inputs

Connector Type: MMCX

Input Level: LVTTTL

Front Panel μ Sync Inputs/Outputs

Quantity: 4 or 8

Connector Type: 19-pin μ HDMI

Signal Level: CML

Signals (μ Sync connector 1): Reference Clock In, TWSI control In, Reference

Clock Out, Gate/Trigger Out, Sync Out

Signals (μ Sync connectors 2-4): Reference Clock Out, Gate/Trigger Out, Sync

Out

Front Panel Clock / Calibration Output

Connector Type: MMCX

Output Impedance: 50 ohms

Output Level: +6 dBm nominal, sine wave

Sample Clock Frequency: 100 MHz to 1.8 GHz

Programmable VCXOs:

Frequency Ranges: 10-945 MHz,

970-1134 MHz, and 1213-1417.5 MHz

Tuning Resolution: 32 bits

Unlocked Accuracy: ± 20 ppm

PLL, Divider & Jitter Cleaner

Type: Texas Instruments CDCM7005

Frequency Dividers: 1, 2, 3, 4, 6, 8 and 16

PCI Interface

PCI Bus: 32-bit, 66 MHz (supports 33 MHz), power only

Environmental

Operating Temp: 0° to 50° C

Storage Temp: -20° to 90° C

Relative Humidity: 0 to 95%, non-cond.

Size: Standard 3U or 6U cPCI board

Ordering Information

Model	Description
7292	High-Speed Synchronizer and Distribution Board - 6U cPCI
7492	High-Speed Synchronizer and Distribution Board - 6U cPCI
7392	High-Speed Synchronizer and Distribution Board - 3U cPCI

Accessories

4 ea. 18" μ Sync cables are supplied with Models 7292 and 7392;

8 ea. 18" μ Sync cables are supplied with Model 7492;

additional cables may be ordered:

2192-018 μ Sync cable - 18"

2192-036 μ Sync cable - 36"