



Model 7494 Model 7394



Features

- Provides sample clock for up to four or eight separate cPCI Cobalt or Onyx boards
- Locks to user-supplied 10 MHz reference clock or on-board reference.
- OCXO provides an exceptionally precise clock

General Information

These High-Speed Clock Generators provide fixed-frequency sample clocks to cPCI Cobalt and Onyx boards in multiboard systems. They enable synchronous sampling, playback and timing for a wide range of multichannel high-speed data acquisition and software radio applications.

Model 7394 is a 3U cPCI board that generates four clocks. Model 7294 is a 6U cPCI board that generates four clocks, while Model 7494 is a double-density 6U cPCI board that generates eight clocks.

Sample Clock Synthesizer

These models use one or two high-precision, fixed-frequency, PLOs (Phase-Locked Oscillators) to generate four or eight output sample clocks. The PLOs accept a 10 MHz reference clock through front panel SMA connectors. The PLOs lock the output sample clocks to the incoming reference. Power splitters then receive the sample clocks and distribute them to four or eight front panel SMA connectors.

These models are available with sample clock frequencies from 1.4 to 2.0 GHz.

On-board Reference Clock

In addition to accepting a reference clock on the front panel, these models include one or two on-board 10 MHz reference clocks. The reference clocks are OCXOs (Oven-Controlled Crystal Oscillators), which provide an exceptionally precise frequency standard with excellent phase noise characteristics.

Physical Characteristics

These models are standard CompactPCI boards. They do not require programming and the interface connectors are used solely for power. The boards can be optionally configured with a PCIe-style 6-pin power connector allowing them to be used in virtually any chassis or enclosure.

Specifications

Sample Clock Frequency: Fixed, 1.4 to 2.0 GHz by ordering option

Sample Clock Outputs

Type: Four or eight front panel female SMA connectors

Output Level: +10 dBm, nominal, sine wave

Reference Clock In

Type: Front panel female SMA connector

Frequency: 10 MHz

Input Impedance: 50 ohms

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

Reference Clock Out

Type: Front or eight front panel female SMA connectors

Center Frequency: 10 MHz

Output Impedance: 50 ohms

Output Level: +10 dBm, nominal, sine wave

Frequency Stability vs. Change in Temperature: 50.0 ppb

Frequency Calibration: ±1.0 ppm

Aging

Daily: ±10 ppb/day

First Year: ±300 ppb

Total Frequency Tolerance (20 years): ±4.60 ppm

Phase Noise

1 Hz Offset: -67 dBc/Hz

10 Hz Offset: -100 dBc/Hz

100 Hz Offset: -130 dBc/Hz

1 KHz Offset: -148 dBc/Hz

10 KHz Offset: -154 dBc/Hz

100 KHz Offset: -155 dBc/Hz

PCI Interface

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

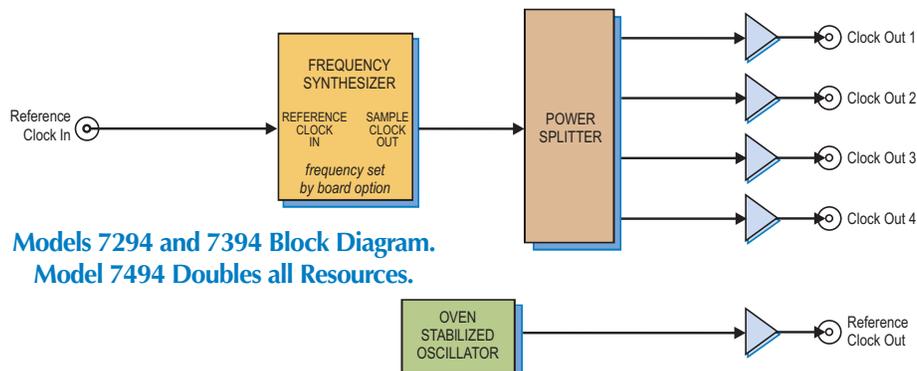
Environmental

Operating Temp: 0° to 50° C

Storage Temp: -20° to 90° C

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

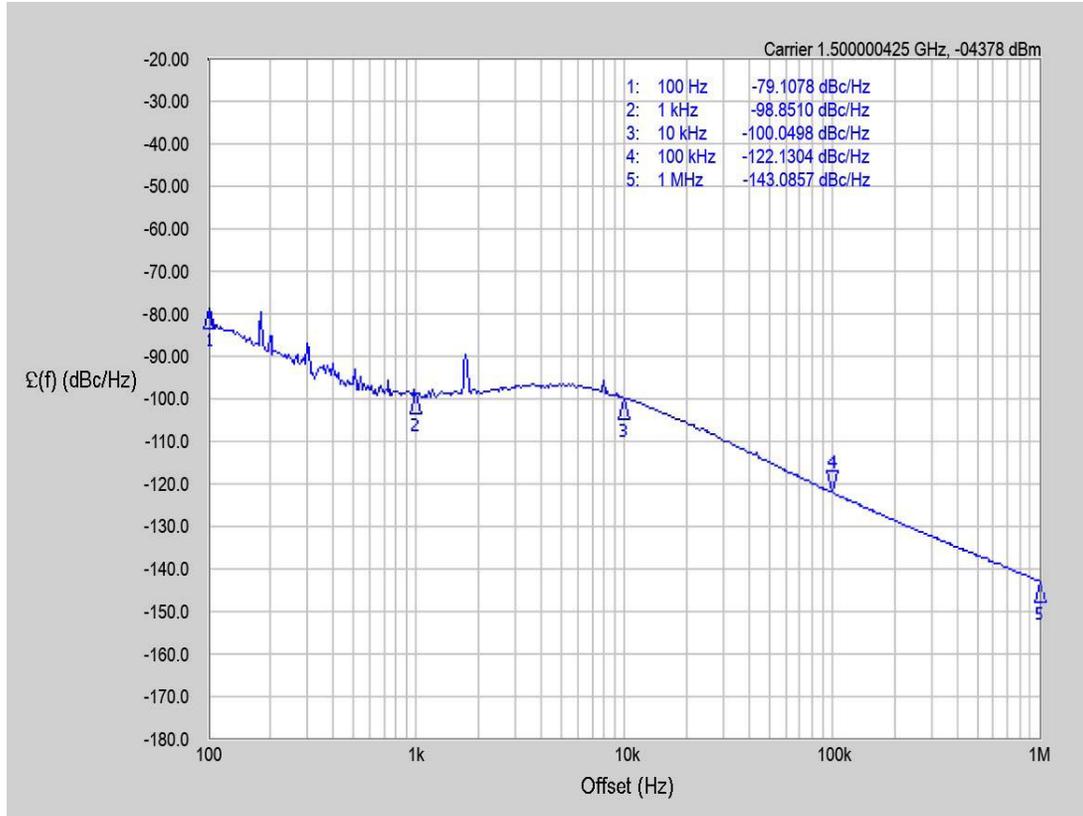
Size: Standard 3U or 6U cPCI board



Models 7294 and 7394 Block Diagram.
Model 7494 Doubles all Resources.

Sample Clock Phase Noise

Phase Noise (1 Hz BW, typical)



Phase Noise 10.00 dB/Ref -20.00 dBc/Hz

Ordering Information

Model	Description
7294	High-Speed Clock Generator - 6U cPCI
7494	High-Speed Clock Generator - 6U cPCI
7394	High-Speed Clock Generator - 3U cPCI

Options	Description
106	PCIe 6-pin connector (Power only)
150	1.500 GHz sample clock
180	1.800 GHz sample clock

Contact Pentek for additional sample clock options