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New!

Model 7191

Programmable Multifrequency Clock Synthesizer - PMC



Features

- Simultaneous synthesis of up to five different clocks
- Eight SMC clock outputs
- Ideal for A/D and D/A converter clock sources
- Typical phase noise: –105 dBc/Hz @ 1 kHz offset
- All clocks are phase-locked to input reference signal
- Input reference frequency of 5 to 100 MHz
- Four programmable VCXOs with 32-bit tuning resolution
- Output clocks of 1, 2, 4, 8, or 16 submultiples of VCXO base frequencies
- Output clock frequencies between 50 and 700 MHz
- Control and status via PCI bus interface

ReadyFlow Board Support Package

Ordering Information

Model	Description
7191	Programmable Multifrequency Clock Synthesizer - PMC

General Information

Model 7191 generates up to eight synthesized clock signals suitable for driving A/D and D/A converters in high-performance real-time data acquisition and software radio systems. The clocks offer exceptionally low phase noise and jitter to preserve the signal quality of the data converters. These clocks are synthesized from on-board programmable VCXOs (voltage controlled oscillators) and can be phase-locked to an external reference signal.

Clock Synthesizer Circuits

The 7191 uses four Texas Instruments CDC7005 clock synthesizer and jitter cleaner devices. Each CDC7005 is paired with a dedicated VCXO to provide the base frequency for the clock synthesizer. Each of the four VCXOs can be independently programmed to a desired frequency between 50 and 700 MHz with 32-bit tuning resolution.

The CDC7005 can output the programmed frequency of its associated VCXO, or generate submultiples using divisors of 2, 4, 8 or 16. The four CDC7005's can output up to five frequencies each. The 7191 can be programmed to route any of these 20 frequencies to the module's five output drivers.

The CDC7005 includes phase-locking circuitry that locks the frequency of its associated VCXO to an input reference clock. This reference is a 5 to 100 MHz signal supplied to a front panel SMC connector.

Eight front panel SMC connectors supply synthesized clock outputs driven from the five clock output drivers, as shown in the block diagram. This supports a single identical clock to all eight outputs or up to five different clocks to various outputs.

With four independently programmable VCXOs and each CDC7005 capable of providing up to five different submultiple clocks, a wide range of clock configurations is possible. In systems where more than five different clock outputs are required simultaneously, multiple 7191's can be used and phase-locked with a 5 to 100 MHz system reference.

PCI Interface

The Model 7191 uses an industry-standard 32-bit, 33/66 MHz PCI interface fully compatible with PCI bus specifications. The interface allows reading and writing of status and control signals for setup, operation and monitoring of the module.

Specifications

Front Panel Reference Input
- **Connector Type:** SMC
- **Input Impedance:** 50 ohms
- **Reference Frequency:** 5 to 100 MHz
- **Input Level:** –6 dBm to +10 dBm

PLL Clock Synthesizers & Jitter Cleaners
- **Quantity:** Four
- **Type:** Texas Instruments CDC7005
- **Frequency Dividers:** 1, 2, 4, 8 and 16

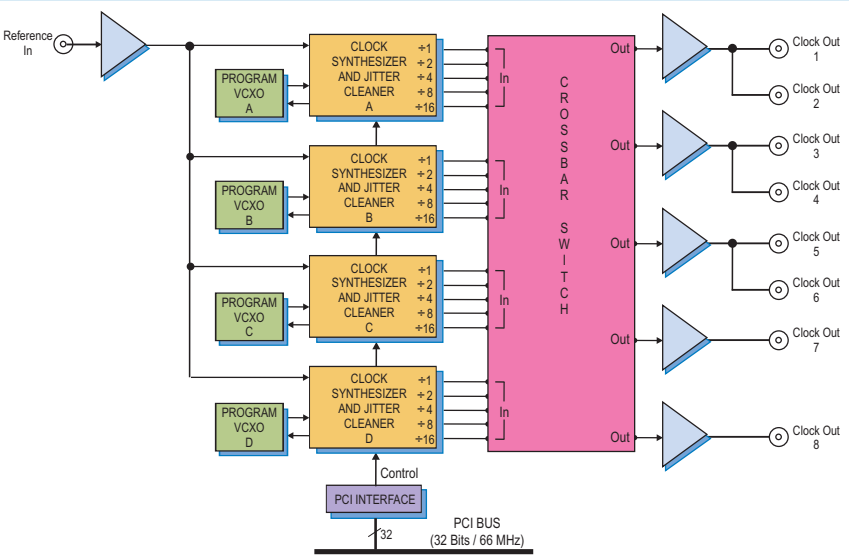
Programmable VCXOs (Quantity: Four)
- **Frequency Range:** 50 to 700 MHz
- **Tuning Resolution:** 32 bits
- **Unlocked Accuracy:** ±20 ppm

Front Panel Clock Outputs (Quantity: Eight)
- **Connector Type:** SMC
- **Output Impedance:** 50 ohms
- **Output Level:** +3 dBm @ 700 MHz
- **Typ. Phase Noise:** –105 dBc/Hz @ 1 kHz (dependent on reference source stability)

PCI Interface
- **PCI Bus:** 32-bit, 66 MHz (supports 33 MHz)
- **Operation:** control and status interface

Environmental
- **Operating Temp:** 0° to 50° C
- **Storage Temp:** –20° to 90° C
- **Relative Humidity:** 0 to 95%, non-cond.

Size: Standard PMC module, 2.91 in. x 5.87 in.



PENTEK

Pentek, Inc. One Park Way ◆ Upper Saddle River ◆ New Jersey 07458
Tel: 201·818·5900 ◆ Fax: 201·818·5904 ◆ Email: info@pentek.com
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