New!

Models 7291, 7291D and 7391

Programmable Multifrequency Clock Synthesizers - 3U/6U cPCI

Model 7391 *Model 7291D*

Features

- Simultaneous synthesis of five or ten different clocks
- Eight or 16 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 or eight 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
7291	Programmable Multifrequency Clock Synthesizer - 6U cPCI
7291D	Dual Programmable Multifrequency Clock Synthesizer - 6U cPCI
7391	Programmable Multifrequency Clock Synthesizer - 3U cPCI

General Information

These Models generate up to 16 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. Models 7291 and 7391 generate eight clocks while Model 7291D generates sixteen.

Clock Synthesizer Circuits

These Models use fthe Texas Instruments CDC7005 clock synthesizer and jitter cleaner devices. Each CDC7005 is paired with a dedicated VCXO (Voltage Controlled Crystal Oscillator) to provide the base frequency for the clock synthesizer. Each of the 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 CDC7005's can output up to five frequencies each. These Models can be programmed to route any of these 20 or 40 frequencies to the board's 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 or 16 front panel SMC connectors supply synthesized clock outputs driven from the five or ten clock output drivers, as shown in the block diagram. This supports a single identical clock to all outputs or up to 16 different clocks to various outputs.

With 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 ten different clock outputs are required simultaneously, multiple 7291D's can be used and phase-locked with a 5 to 100 MHz system reference.

PCI Interface

These Models use 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 board.

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 or eight
- **Type:** Texas Instruments CDC7005
- **Frequency Dividers:** 1, 2, 4, 8 and 16

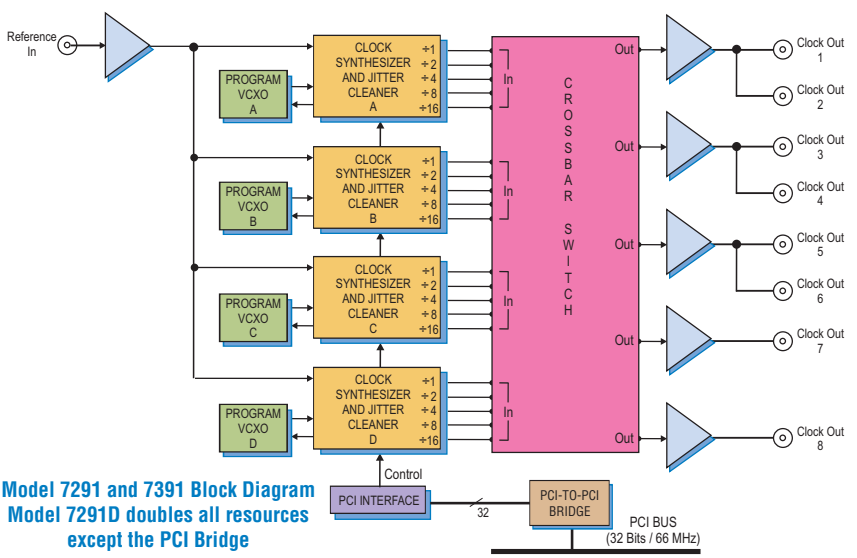
Programmable VCXOs (Quantity: 4 or 8)
- **Frequency Range:** 50 to 700 MHz
- **Tuning Resolution:** 32 bits
- **Unlocked Accuracy:** ±20 ppm

Front Panel Clock Outputs (Quantity: 8 or 16)
- **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 3U or 6U cPCI board.



Model 7291 and 7391 Block Diagram
Model 7291D doubles all resources except the PCI Bridge

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