

CDM-5

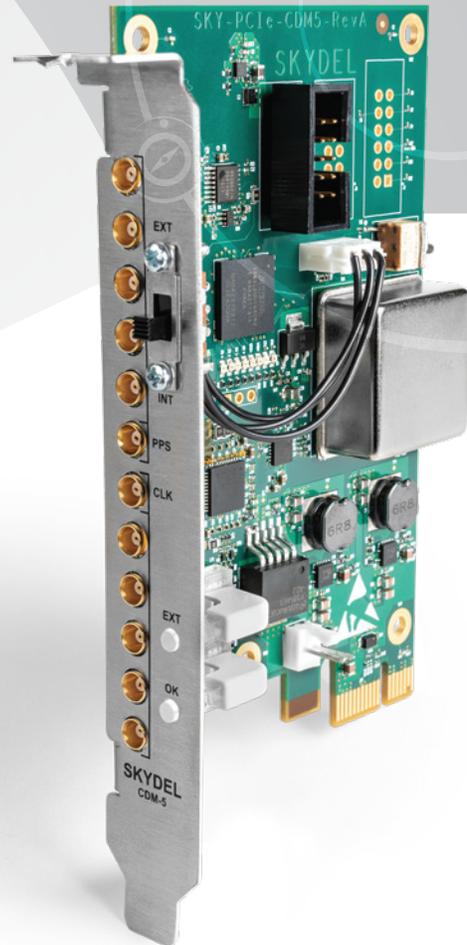
10MHz and 1PPS synchronization in a small, PCIe form factor

Skydel is now part of Orolia!

We are joining the global leader in Resilient Positioning, Navigation and Timing (PNT) solutions for critical military and commercial applications.

Skydel's CDM-5 clock distribution module is a PCIe card that provides 10MHz and 1PPS signals for up to five devices that need tight and precise synchronization.

The clock distribution module is ideal for PCIe-based Software-Defined Radios (SDR) installed in rack-mount or desktop PCs, and can also be used for any other applications that require a precise timing reference.



CDM-5 can synchronize up to 5 devices using 10MHz and 1PPS signals



A CDM-5 is shown here synchronizing SDRs in a Skydel SDX GNSS Simulator System

Key Features

- Timing and frequency source with 5-way distribution of 10MHz and 1PPS signals
- PCIe form factor for rack-mount or desktop PC
- Two operating modes: internal clock (OCXO) or external clock (10MHz and 1PPS)
- Supports standalone operation with 12V DC power supply



Two operating modes

CDM-5 features internal and external operating modes. In internal mode, the internal clock signal is extracted from the onboard high-grade, oven-controlled crystal oscillator (OCXO). In external mode, CDM-5 accepts input signals in the form of 10MHz and 1PPS, which are then re-distributed via five matched-length traces. Split signals are amplified to maintain power levels across all distributed paths.

Additionally, CDM-5 will regenerate 1PPS from an external 10MHz-only source if a 1PPS source is not available.

Integrate it in your own design

CDM-5 can be integrated into a custom assembly simply by removing the bracket plate and powering the board through its 12V DC power pins. The operating mode can then be toggled using the onboard switch.

Specifications

→ See complete specifications at skydelsolutions.com

Input

Connector Type	MCX
10MHz input range	0.5...5 V
1PPS input range	2.5...5 V

Output

Connector Type	MCX
10MHz	2.5 V
1PPS	5 V
10MHz output waveform	Square wave
1PPS output waveform	Logic-level pulse
10MHz duty cycle	50%
1PPS duty cycle	1%
Time offset between any two 1PPS outputs	< 50 ps

Oscillator Performance

Frequency accuracy	< 100 ppb
Recommended warm-up time	30 min
Minimum operational warm-up time	5 min
Phase-noise	-116dBc@10Hz -137dBc@100Hz -144dBc@1kHz

Power Supply

DC Input (PCIe slot or external connector)	12 V
Current consumption	< 1 A

Physical

Dimensions	11.2 x 6.6 x 2.2 in.
Temperature range	0...50 °C



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