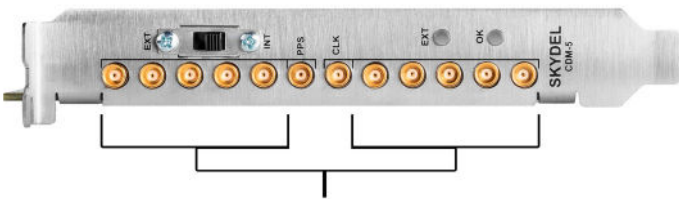
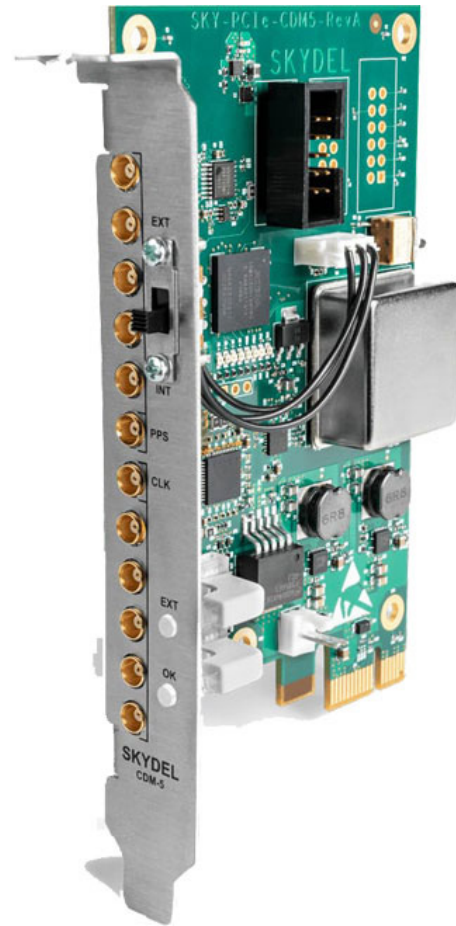


CDM-5

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

Orolia’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

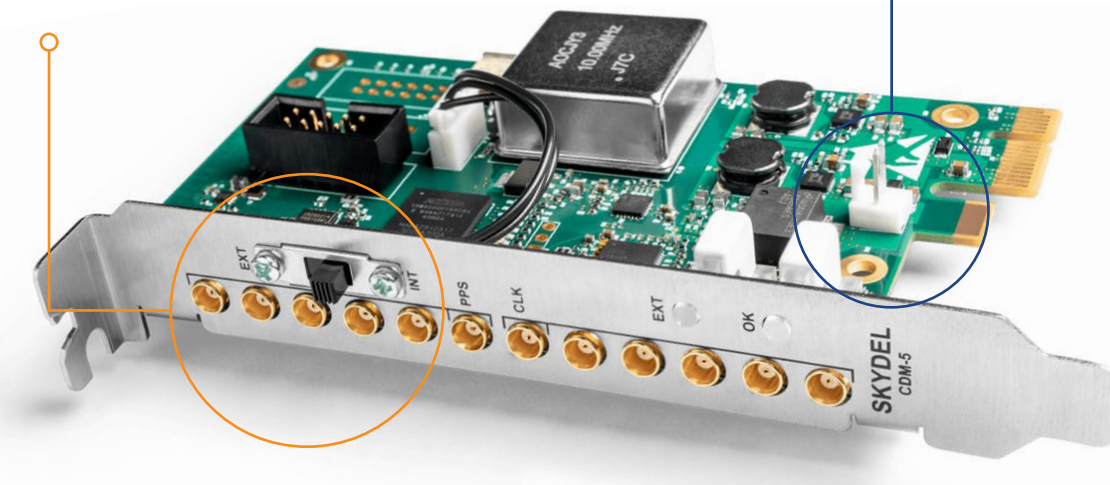
CDM-5 features internal and external operating modes. In internal mode, the internal clock signal is extracted from the onboard high-grade, oven-controlled crystal oscillator (OCXO).

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

Input		Oscillator Performance	
Connector Type	MCX	Frequency accuracy	< 100 ppb
10MHz input range	0.5...5 V	Recommended warm-up time	30 min
1PPS input range	2.5...5 V	Minimum operational warm-up time	5 min
Output		Phase-noise	-116dBc@10Hz -137dBc@100Hz -144dBc@1kHz
Connector Type	MCX	Power Supply	
10MHz	2.5 V	DC Input (PCIe slot or external connector)	12 V
1PPS	5 V	Current consumption	< 1 A
10MHz output waveform	Square wave	Physical	
1PPS output waveform	Logic-level pulse	Dimensions	11.2 x 6.6 x 2.2 in.
10MHz duty cycle	50%	Temperature range	0...50 °C
1PPS duty cycle	1%		
Time offset between any two 1PPS outputs	< 50 ps		