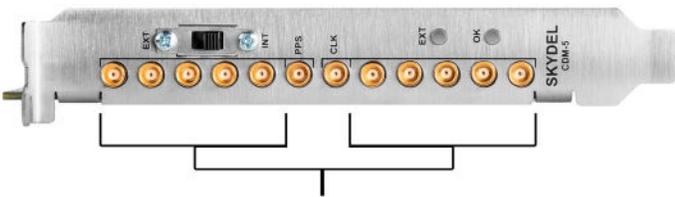
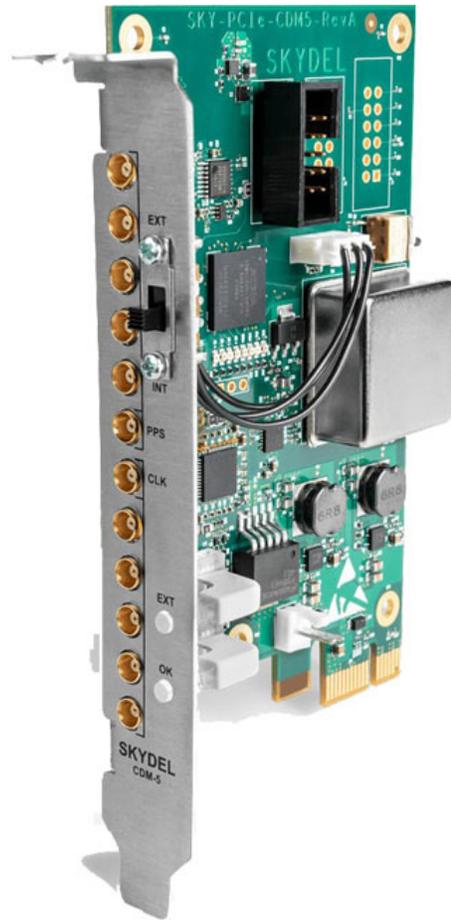


# CDM-5

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		