

Pi5-CM-CB-001

An IO board for Raspberry Pi Compute Module 5

User Manual

Introduction

The **Pi5-CM-CB-001** is a specialized carrier board designed for the Raspberry Pi Compute Module 5 (CM5). By breaking out the CM5's core signals into standard interfaces—including USB, Ethernet, HDMI, and MIPI—it bridges the gap between the module's raw power and practical connectivity.

With a compact form factor nearly identical to the CM5, this carrier board is ideal for integration into space-constrained applications like IP cameras. Notably, it features an onboard video capture card that converts the CM5's HDMI output into a UVC-compliant video stream, enhancing its versatility for imaging solutions.

FEATURES

- Two FPC connectors for connecting CMOS sensors using MIPI interfaces.
- A RJ45 port for network connectivity to the CM5.
- A built-in video capture card that converts the CM5's HDMI output into a UVC video stream
- Fast integration interfaces
- Single HDMI video output, UVC out, and UART control for simple UAV/robot hookup.
- PCIe expansion for optional AI acceleration
- PCIe interface supports optional AI modules, enabling 13 TOPS or 26 TOPS configurations per customer request.

SPECIFICATIONS

Model Name	Pi5-CM-CB-001
Technical	
HDMI compliance	HDMI 2.0
HDMI Video bandwidth	up to 594 MHz
HDMI Video support	up to 3840x2160@60
UVC Video support	up to 3840x2160@60
Output TMDS signal	1.2 Volts [peak-to-peak]
Output DDC signal	5 Volts [peak-to-peak, TTL]
ESD protection	Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]
PCB stack-up	6-layer board [impedance control — differential 90Ω、100Ω; single 50Ω]
Output	1xHDMI, 1xUSB(UVC)
I/O	1xWafer(UART), 1xUSB, 1xRJ45, 1xFPC(PCIE)
HDMI connector	Type A [19-pin female]
USB connector	Type C
Mechanical	
Housing	Metal enclosure
Fixedness	Wall-mounting case with screws
Power supply	5V DC
Power consumption	Watt [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]