



CM5-PICO

Raspberry Pi CM5 Palm-size Computer

Product Introduction

Project code: AB613
PRO3 team | July 09, 2026

CM5-PICO

- **CM5-PICO** is a compact, energy-efficient, dual-4K fanless ARM PC powered by Raspberry Pi CM5 system on module (SoM)
- All I/O ports are positioned on one side of housing for easy cable installation and stacking.
- All external I/O ports are protected by on-board TVS and ESD diodes for reliable operation in industrial environment.
- Built-in high quality CR2032 coin battery for Real-time Clock (RTC) backup.
- Passive-cooling, rugged aluminum case with no moving parts, ideal for reliable 24x7 operation.
- Long product supply life-cycle through January 2036.
- Developer friendly — Benefit from the Raspberry Pi's vast, vibrant open-source community that delivers abundant tutorials, projects, libraries, and hardware add-ons, fostering innovation and rapid problem-solving worldwide.
- Perfect for custom projects, production, and scalability — the modular 'brain + carrier board' design enables tailored solutions, seamless integration, and effortless scaling.

Specification	
SoM	Raspberry Pi Compute Module 5 (CM5) series
Graphics Engine	Broadcom VideoCore VII GPU running at 800MHz
System memory	2GB, 4GB, 8GB, 16GB LPDDR4 on SoM
Storage	0GB (CM5 Lite), 16GB, 32GB, 64GB eMMC on SoM On-board microSD card slot (for CM5 Lite only)
Video-out	2 x HDMI 2.1 (4K@60Hz), H.265 HEVC hardware decode
Video-in	2 x Internal 4-lane DSI/CSI-2 connector (22-pin, 0.5 mm pitch)
Hi-Speed I/O	2 x USB 3.2 Type-A, 1 x USB Type-C (for f/w update)
Legacy I/O	Internal RS232 header (RX, TX, GND)
LAN	Gigabit Ethernet port supporting PTP
WLAN	Wi-Fi 5 IEEE 802.11ac/a/b/g/n (<i>CM5 option</i>)
WWAN	Quectel EG916Q-GL CAT 1 bis on M.2 3024 Key-B (<i>option</i>)
Internal I/O	M.2 2280 Key-M Gen2x1 slot, 40pin GPIO HAT & fan header
Watchdog	Built-in Broadcom SoC
Dimension	114.8(L) x 76.0(W) x 31.3(H) mm ³ / 0.27 Litre
Weight	Net weight approx 250g
Op. Temperature	Main unit: -20°C - +55°C; AC adapter: 0°C ~ +40°C
Power Input	DC 5V ~ 20V range. Bundled DC 12V 2.5A power adapter. CR2032 coin battery for RTC backup
OS	Open-source Raspberry Pi OS (based on Debian 13)
Supply lifecycle	January 2036

CM5-PICO

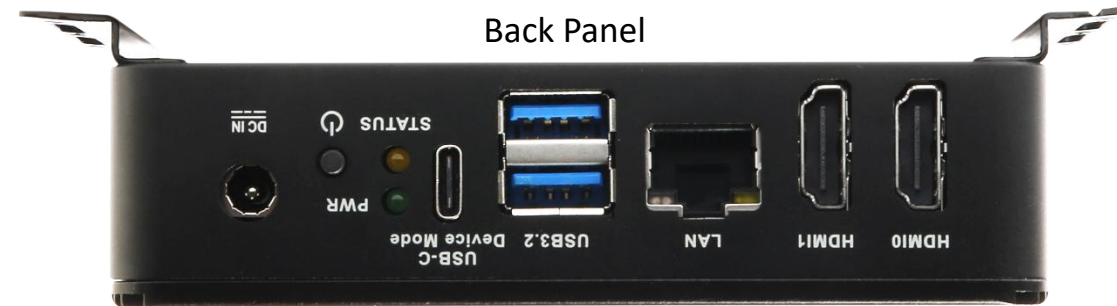
Product Outlook

0.27 Litre

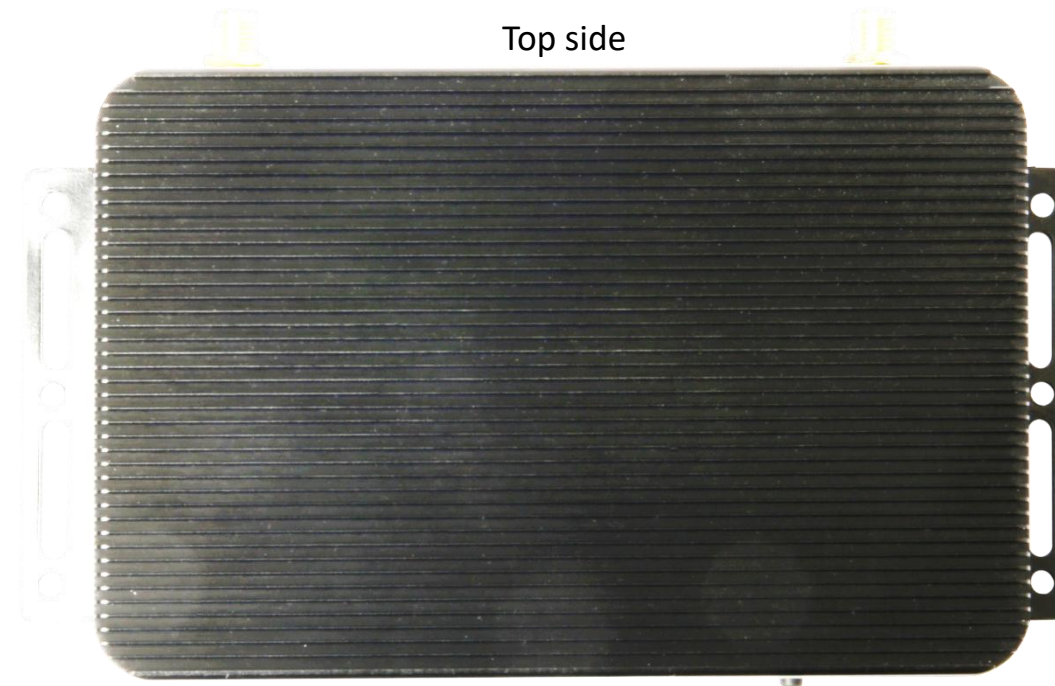
Left side



Back Panel



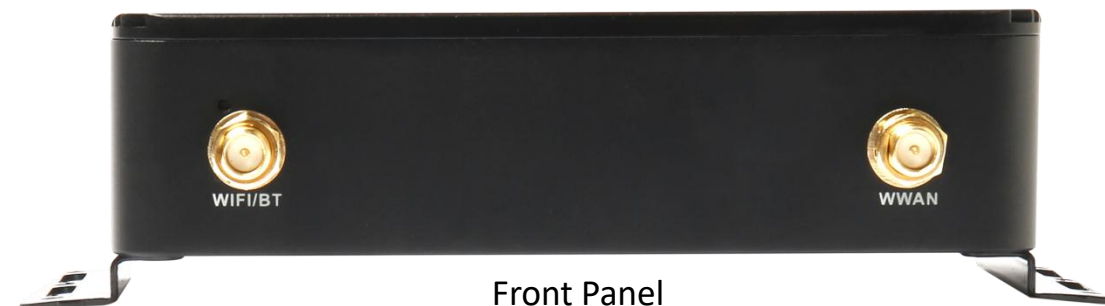
Top side



Right side

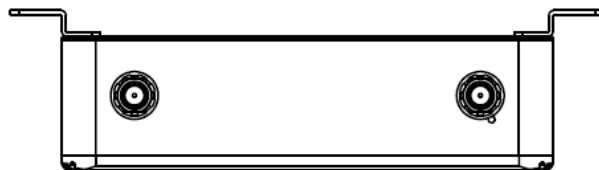
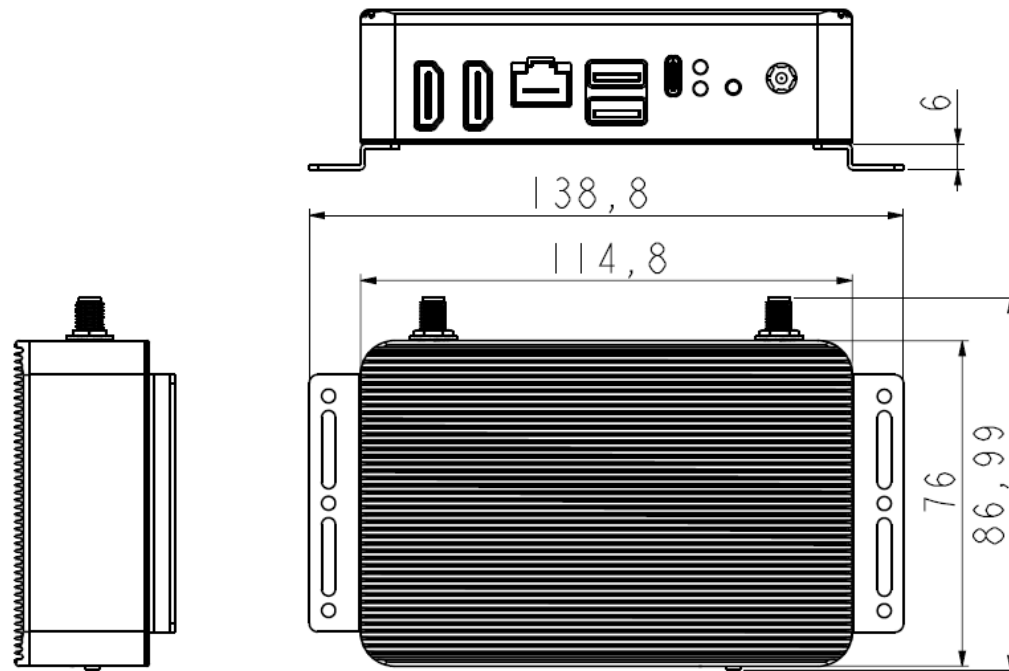


Front Panel

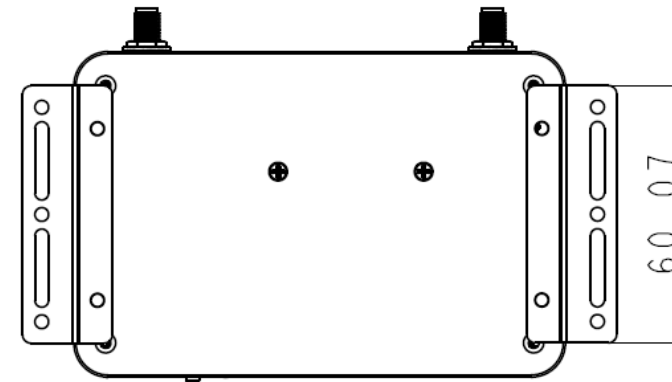
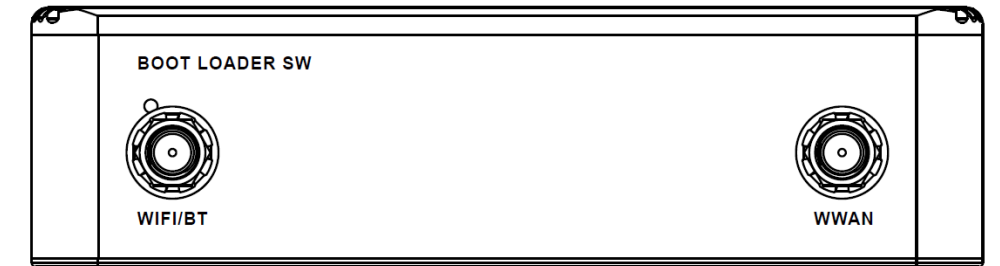


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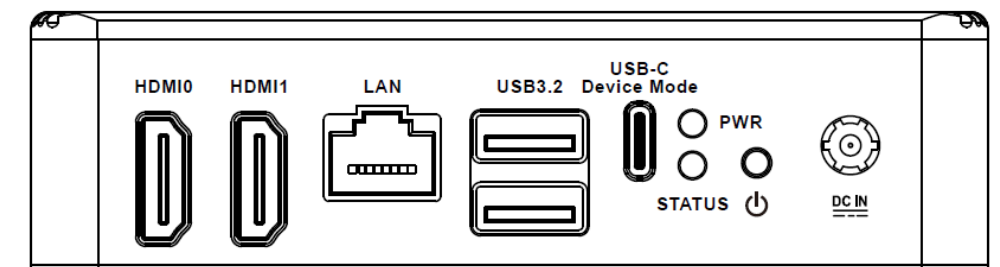
Mechanical Drawing



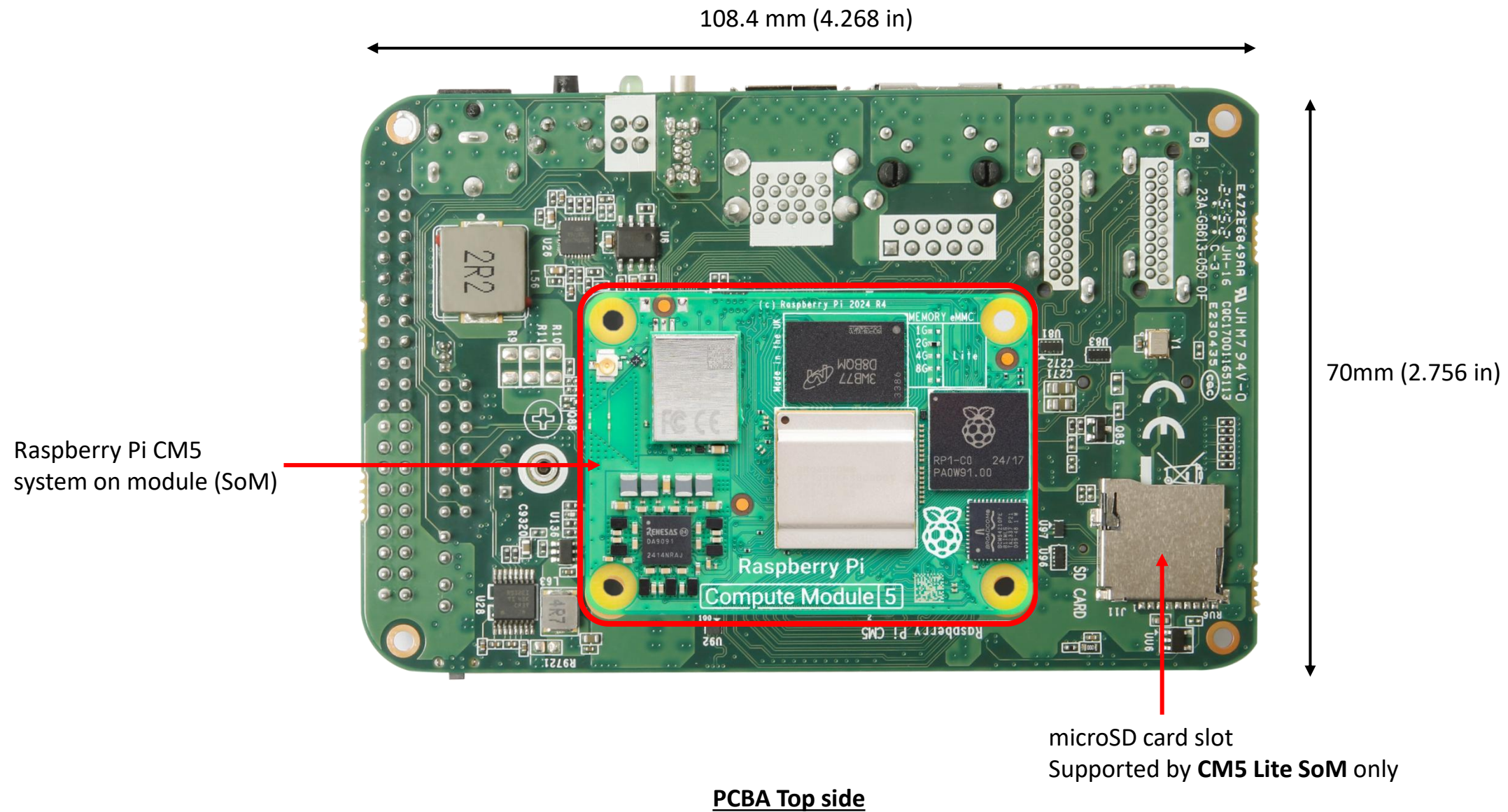
Front Panel



Back Panel



Internal Connectors



CM5-PICO

Internal Connectors

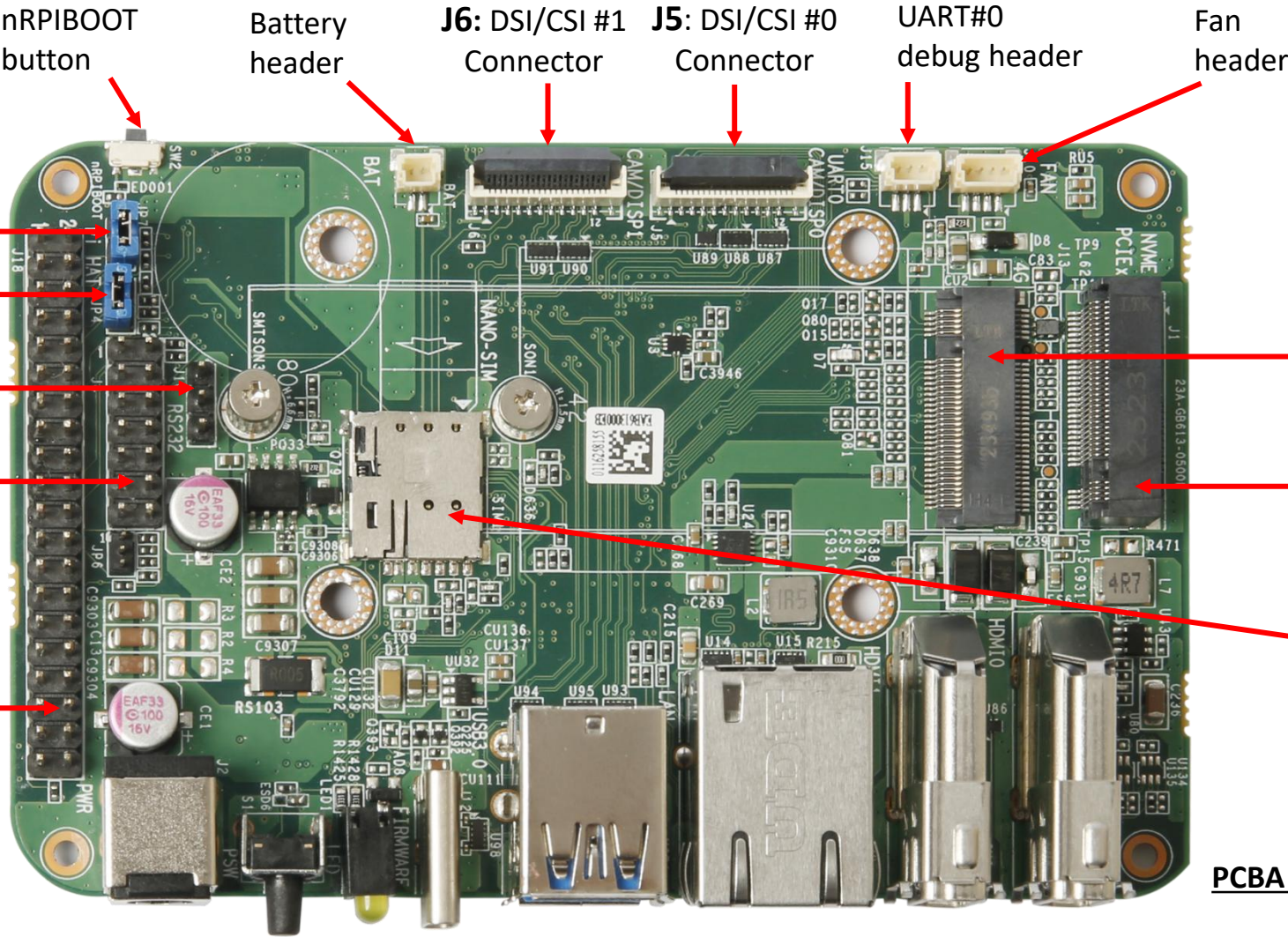
JP7: Install to route I2C to DSI/CSI #1

JP4: Install to route I2C to DSI/CSI #1

RS232 header

J4: CM5 Boot & EEPROM Overrides header.
(see table below)

40-pin Raspberry Pi HAT
(Hardware Attached on Top)
header



M.2 key-B 3024 socket for
optional CAT-1 bis module

M.2 key-M 2280 socket for
optional SSD or NPU module

Nano SIM socket

PCBA Bottom side

J4: CM5 Boot & EEPROM Overrides header

Pin	Function	Description
1-2	nRPIBOOT	If a jumper is placed here, it forces CM5 to boot from USB instead of the on-board eMMC. This is useful if the eMMC is corrupted or unavailable.
3-4	EEPROM_nWP	If a jumper is placed here, the jumper write-protects the EEPROM on CM5, preventing accidental or unauthorised modifications.
6	SYNC_OUT	This pin provides an IEEE1588 timing signal; it can also be configured as an input for external timing.
12	PMIC_ENABLE	This pin controls the Power Management IC (PMIC), enabling or disabling certain power functions.
13-14	Wake/shutdown button	These pins connect a push button to allow manual wakeup or shutdown of CM5.

CM5-PICO

Model Number 1/2

Base Model	Wireless	Memory	Storage	Base Model	Wireless	Memory	Storage
EMB-CM5-PICO-002016	None	2GB LPDDR4x	16GB eMMC	EMB-CM5-PICO-102016	Wi-Fi 5, BT 5	2GB LPDDR4x	16GB eMMC
EMB-CM5-PICO-002032	None	2GB LPDDR4x	32GB eMMC	EMB-CM5-PICO-102032	Wi-Fi 5, BT 5	2GB LPDDR4x	32GB eMMC
EMB-CM5-PICO-002064	None	2GB LPDDR4x	64GB eMMC	EMB-CM5-PICO-102064	Wi-Fi 5, BT 5	2GB LPDDR4x	64GB eMMC
EMB-CM5-PICO-004016	None	4GB LPDDR4x	16GB eMMC	EMB-CM5-PICO-104016	Wi-Fi 5, BT 5	4GB LPDDR4x	16GB eMMC
EMB-CM5-PICO-004032	None	4GB LPDDR4x	32GB eMMC	EMB-CM5-PICO-104032	Wi-Fi 5, BT 5	4GB LPDDR4x	32GB eMMC
EMB-CM5-PICO-004064	None	4GB LPDDR4x	64GB eMMC	EMB-CM5-PICO-104064	Wi-Fi 5, BT 5	4GB LPDDR4x	64GB eMMC
EMB-CM5-PICO-008016	None	8GB LPDDR4x	16GB eMMC	EMB-CM5-PICO-108016	Wi-Fi 5, BT 5	8GB LPDDR4x	16GB eMMC
EMB-CM5-PICO-008032	None	8GB LPDDR4x	32GB eMMC	EMB-CM5-PICO-108032	Wi-Fi 5, BT 5	8GB LPDDR4x	32GB eMMC
EMB-CM5-PICO-008064	None	8GB LPDDR4x	64GB eMMC	EMB-CM5-PICO-108064	Wi-Fi 5, BT 5	8GB LPDDR4x	64GB eMMC
EMB-CM5-PICO-016016	None	16GB LPDDR4x	16GB eMMC	EMB-CM5-PICO-116016	Wi-Fi 5, BT 5	16GB LPDDR4x	16GB eMMC
EMB-CM5-PICO-016032	None	16GB LPDDR4x	32GB eMMC	EMB-CM5-PICO-116032	Wi-Fi 5, BT 5	16GB LPDDR4x	32GB eMMC
EMB-CM5-PICO-016064	None	16GB LPDDR4x	64GB eMMC	EMB-CM5-PICO-116064	Wi-Fi 5, BT 5	16GB LPDDR4x	64GB eMMC

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Model Number 2/2 (CM5 Lite)

Base Model	Wireless	Memory	Storage	Base Model	Wireless	Memory	Storage
EMB-CM5-PICO-002S32	None	2GB LPDDR4x	32GB microSD	EMB-CM5-PICO-102S32	Wi-Fi 5, BT 5	2GB LPDDR4x	32GB microSD
EMB-CM5-PICO-004S32	None	4GB LPDDR4x	32GB microSD	EMB-CM5-PICO-104S32	Wi-Fi 5, BT 5	4GB LPDDR4x	32GB microSD
EMB-CM5-PICO-008S32	None	8GB LPDDR4x	32GB microSD	EMB-CM5-PICO-108S32	Wi-Fi 5, BT 5	8GB LPDDR4x	32GB microSD
EMB-CM5-PICO-016S32	None	16GB LPDDR4x	32GB microSD	EMB-CM5-PICO-116S32	Wi-Fi 5, BT 5	16GB LPDDR4x	32GB microSD
EMB-CM5-PICO-002S64	None	2GB LPDDR4x	64GB microSD	EMB-CM5-PICO-102S64	Wi-Fi 5, BT 5	2GB LPDDR4x	64GB microSD
EMB-CM5-PICO-004S64	None	4GB LPDDR4x	64GB microSD	EMB-CM5-PICO-104S64	Wi-Fi 5, BT 5	4GB LPDDR4x	64GB microSD
EMB-CM5-PICO-008S64	None	8GB LPDDR4x	64GB microSD	EMB-CM5-PICO-108S64	Wi-Fi 5, BT 5	8GB LPDDR4x	64GB microSD
EMB-CM5-PICO-016S64	None	16GB LPDDR4x	64GB microSD	EMB-CM5-PICO-116S64	Wi-Fi 5, BT 5	16GB LPDDR4x	64GB microSD

CM5-PICO

Available Ordering P/N

SKU	BOM	Description	Remark
EMB-CM5-PICO-104032	250-AB613-002EB	EMBEDDED PICO PC, RASPBERRY PI CM5104032, 4GB LPDDR4, 32GB eMMC, 2XHDMI, 2XUSB3.2, WIFI5, DC12V, US/UK/EU PLUGS	Stock model
EMB-CM5-PICO-104032-Q	250-AB613-102EB	EMBEDDED PICO PC, RASPBERRY PI CM5104032, 4GB LPDDR4, 32GB eMMC, 2XHDMI, 2XUSB3.2, WIFI5, 4G CAT-1 bis , DC12V, US/UK/EU PLUGS	
EMB-CM5-PICO-104064	250-AB613-202EB	EMBEDDED PICO PC, RASPBERRY PI CM5104064, 4GB LPDDR4, 64GB eMMC , 2XHDMI, 2XUSB3.2, WIFI5, DC12V, US/UK/EU PLUGS	

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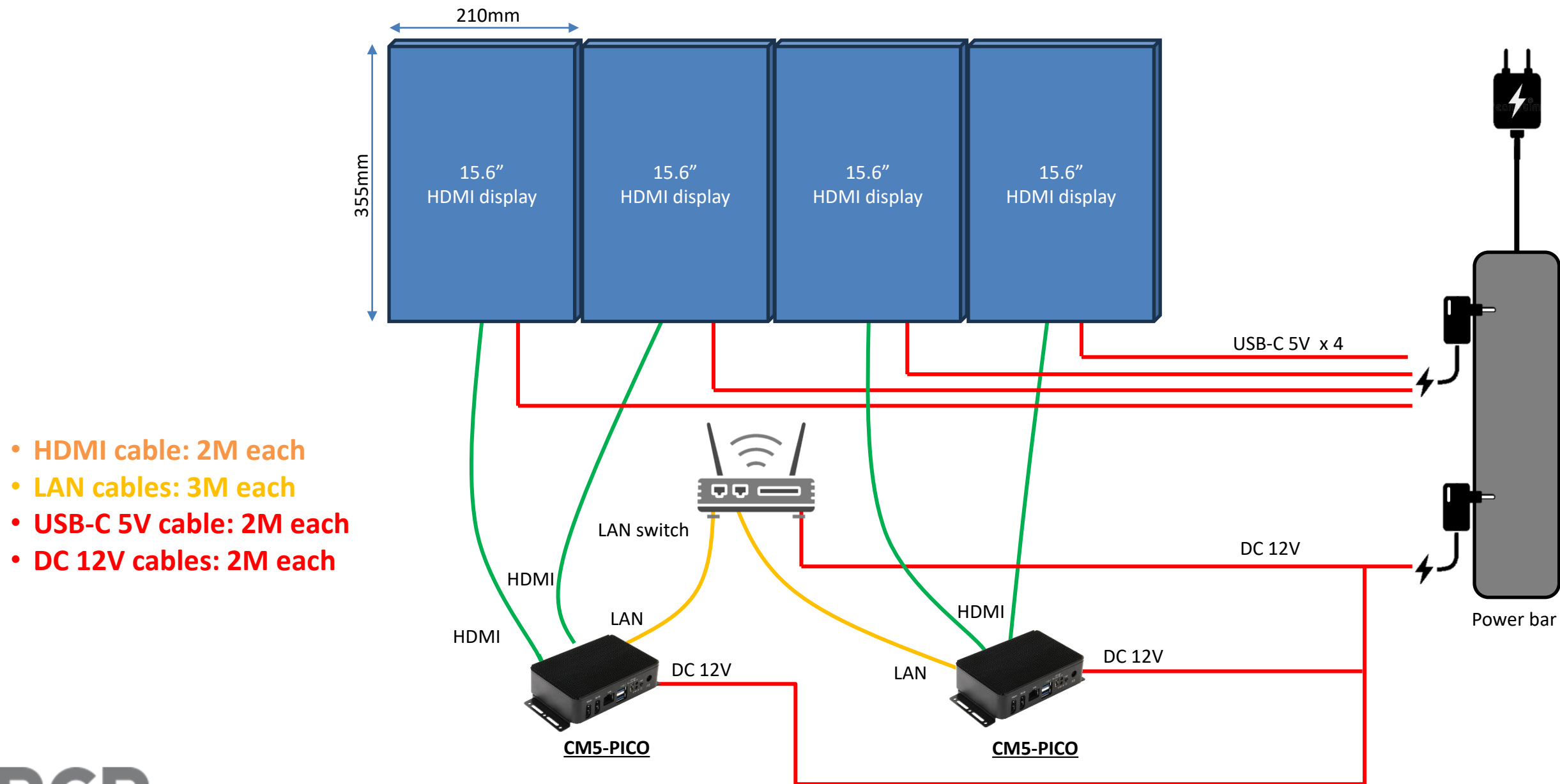
Application Example

Video wall live demo at Embedded World 2026 - This installation demonstrates COOPlayer software running on 2 synchronized CM5-PICO units. The demo shows frame-accurate video synchronization across both devices — no server needed



CM5-PICO

COOPlayer demo setup



CM5-PICO

External resources

- **Raspberry Pi Software**
<https://www.raspberrypi.com/software/>
- **Ubuntu OS for Raspberry Pi 5**
<https://ubuntu.com/download/raspberry-pi>
- **Twister OS**
<https://twisteros.com>
- **Emteria**
<https://emteria.com>
- **LibreELEC media center for Raspberry Pi**
<https://libreelec.tv/downloads/raspberry/>
- **Home Assistant**
<https://www.home-assistant.io/installation/raspberrypi>
- **Pi-Apps**: open-source Raspberry Pi app store
<https://pi-apps.io/>
- **Anthias**
<https://anthias.screenly.io/>

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