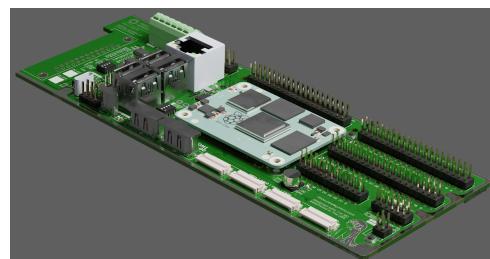


PMC-C-CMX

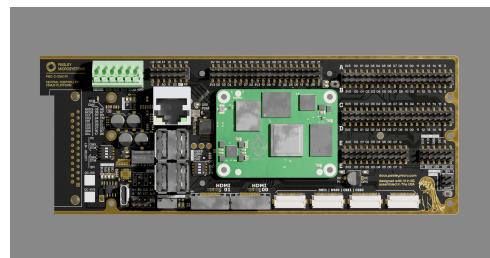
Versatile, plug-and-play system controllers for CM4/5

Featuring full breakouts for all CM4/5 IO, STM32H7 for real-time control, B/M key PCIe Gen 3 slots with cellular options and full compatibility with all PMC functional modules.



Key advantages:

- Minimal, streamlined electronics configuration.
- Logically ordered and labeled IO/management pins.
- Standardized, DIN rail-compatible form factor removes the need for hardware considerations.
- USB-C PD 2.0 and 7-55V DC input up to 10A.
- Rugged system includes IEC Level 4 ESD protection, ENIG gold finish for stellar EMI resistance.



General Specification

Dimension	190.5 x 72.0	mm
Underside/top min. clearance	-5.8, +22.0	mm

Compute Module

High Speed IO

HDMI(R)	2 x	4k60p 1.4b
MIPI CSI/DSI	2 x 2	3/5 Lane
Native USB	4 or 3 or 1*	480Mbps 2.0
PCIe support	8GT/s PCIe 3.0	
PCIe NGFF card form factors	M- 30 x 30/42/80	mm

General IO

Cellular Capability	Yes, with Nano-SIM and B-key Card	
Ethernet	1000-T	Mbps
Conforms to RPi 40P header	Yes	
Conforms to RPi HAT spec	Yes	
Max. Pin-Pin Crosstalk	0.25V [PASS]*****	3V3 @ 10MHz

RS-485 USART transceiver

RS-485	20	Mbps
Transceiver IO	12/13	TX/RX
PROFIBUS-DP capable	Yes*****	

ESD protection

HDMI(R)	Yes, IEC 61000-4-2 Level 4	
USB		

CM Real Time Clock

RTC Chip	PCF85063AT	
Crystal Tolerance/Drift	-6.666666667	PPM, PPM/yr
Wake-on-alarm and interrupt	Yes	

*4 USB A ports or 3 USB A ports with populated PCIe B card, or 1 USB-C 2.0 port as master or slave (for EEPROM flash)

** BCM2711 has internal 2.5kV HBM GPIO ESD tolerance

***** Full electronic compliance with PROFIBUS-DP, standardized common connectors available with additional SKUs

Real Time Controller STM32H7B0

General Information

Flash Size	128k/1.4M	flash/RAM
Core Clock	280	MHz, max
Ext. Clocks	16 + 32.768	MHz, KHz
OTA flash	Yes***	

GPIO

User GPIOs	4x16 + 1x8 [58 total]	
ESD tolerance	IEC 61000-4-2 +/-25kv	
Max. Pin-Pin Crosstalk	0.35V [PASS]*****	3V3@10MHz
Dedicated SWD/ST-LINK(R) interface	Yes (connected to PA13/14)	

*** OTA capable through UART with supplied program running on compute module, or SWD through additional SKU

***** PASS status is given to the crosstalk spec if the maximum measured induced crosstalk does not exceed 1/2 logic low

Power Inputs

Wire/Line-Pressing terminal input

Voltage range	7-55/10	VDC
Current Max.	10	ADC
Reverse Polarity protect	Yes	

USBC-PD R2.0 input

Valid VBUS Voltages	44089	V
Valid PD Powers	21+/27+/45+	W
User-programmable PDOs	Yes*****	

Power draw

Quiescent draw without compute module	560 +/-20	mW
Quiescent draw with compute module	2200 +/-50	mW
Short-circuit tolerance	Yes****	

**** Suitable for live/hot development as 3V3 GPIO to GND does not cause compute module or STM32H7 reboot.

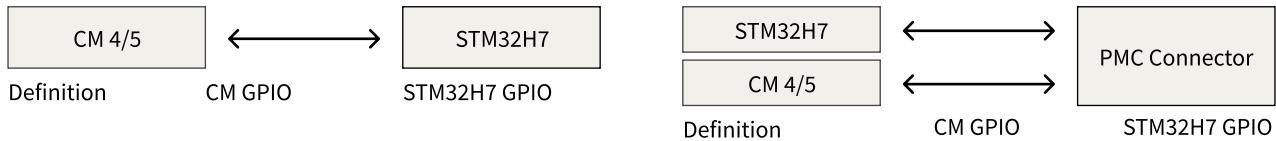
***** Programming and MCU interface exposed through onboard 8-pin header

Onboard Power Converters

5V bus total current	5	ADC
Input-5V efficiency	85-92	%@ 2.5A, 48VIN
5V maximum ripple	30	mV (CCM only)
3V3 bus total current	5	ADC
Input-3V3 efficiency	82-90	%@ 2.5A, 48VIN
5V maximum ripple	20	mV (CCM only)
5V GPIO current limit	Unregulated	
3V3 GPIO current limit	1.5	ADC

PMC modular bus connector pinout

LSI configuration and pin table



UART

TX+	14	PA3
RX+	15	PA2

SPI

MISO+	9	PC1
MISO+	10	PC2
CLK	11	PB10
CS	Undefined	Undefined

SPI

MISO	5	PA7
MOSI	6	PA6
CLK	7	PB3
CS [0-3]	[24, 25, 26, 27]	PC[10,11,12,13]

I^2C

SDA	11	PB7
SCL	Undefined	PB6

+ Signal names are referenced from the compute module

Modular Bus and CM-STM interconnect buffers

UART/SPI max speed	24	Mbps
I2C max speed	2	Mbps
UART/SPI maximum rise-time	9.3	ns
I^2C maximum rise-time	132	ns

The PMC-C-CMX controller is designed and tested to ensure reliable function on the fastest interchip and system data rates.

Ordering information

Non-Stocked (NS) lead times are for reference only and are neither guaranteed nor binding. Please contact sales regarding specific production time information. In most cases, actual lead time and time-to-stock is less than the values referenced.

Product Name/ID	SKU	Description	Sale Price / 1u	/ 8u	/ 20u	NS lead time
PMC-C-CMX R1	PMC0100	Rapidly deployable controller solution for high performance embedded applications, to use with RPi(r) CM4/5 modules	99.99 USD	97.99	93.99	6 weeks
PMC-HW-G3	PMC0930	3D-printed IEC-DIN rail mount for 190.5mm (3 x 63.5L) PMC Series PC Boards, green	9.99 USD	9.49	8.79	2 weeks

Product Name/ID	SKU	Description	Sale Price / 1u	/ 8u	/ 20u	NS lead time
PMC-HW-B3	PMC0931	3D-printed IEC-DIN rail mount for 190.5mm (3 x 63.5L) PMC Series PC Boards, black	9.99 USD	9.49	8.79	2 weeks
ST-LINK V2	PMR2001	Official ST-LINK V2 programmer by STM	34.99 USD	29.99		2 weeks

Please contact sales regarding volume pricing on orders above 100 units

Compliance Information

FCC Section 15	Compliant	CE for EEA	Compliant
FCC Section 18^	Compliant	UK CA	Compliant
RoHS China	Compliant	EU RoHS	Compliant

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