OHM pd-1 vs market alternatives

powering a robot's electronics from one 3S LiPo

1 summary

OHM pd-1 is the only board in this comparison that turns one 3S LiPo into regulated 5 V, 3.3 V, 12 V and usb-c power at the same time, with protection on every rail. It replaces three to five parts. The board accepts one 3S to 6S LiPo (9.0 V to 25.2 V); this comparison uses a 3S pack.

> **pricing basis.** Prices are retailer list prices on 26 November 2026. USD prices are converted at 3.6725 AED.

2 comparison

what a robot build needs	OHM pd-1	Matek PDB-XT60	CC3D dual-BEC PDB	Matek PDB-HEX 12S	Holybro PM02 V3	Pololu D36V50F5	LM2596 modules
regulated 5 V	**yes, 3 A**	yes, 2 A	yes, current not stated	yes, 5 A	yes, 3 A	yes, 5.5 A	yes, one rail per module
regulated 3.3 V	**yes, 800 mA**	no	no	no	no	no	needs another module
regulated 12 V on a 3S pack	**yes, SEPIC**	no, needs 4S	no, needs 4S–6S	only if the jumper is set to 12 V, losing 5 V	no	no	needs another module
5 V, 3.3 V and 12 V at the same time	**yes**	no	no	no	no	no	only with 3 modules
usb-c output	**5 V / 3 A (15 W)**	no	no	no	no	no	no
protection on every rail	**over-current, short-circuit and thermal on all 3 rails; soft-start and input UVLO on 5 V and 12 V**	short-circuit tolerant for limited periods	none listed	none listed	none listed	yes, single rail only	none listed
boards needed for 5 V + 3.3 V + 12 V	**1**	can't do it	can't do it	can't do it	can't do it	2 or more	3, plus wiring and trim-pot tuning
cost of that setup	**120 AED**	n/a	n/a	n/a	n/a	over 300 AED	39 AED plus wiring
UAE availability	**made in the UAE, with datasheet and safety card**	listed as no longer available	out of stock on desertcart.ae	ships from abroad	ships from abroad	ships from abroad	yes (Besomi)

reading the table. The OHM pd-1 column is outlined in brand yellow. A shaded yellow cell marks a need that only OHM pd-1 meets in this comparison. Sources are listed in section 5.

3 why OHM pd-1 wins

- three regulated rails, 5 V, 3.3 V and 12 V, in one board.
- 12 V from a common 3S pack, through a SEPIC converter that stays regulated with the battery above or below 12 V.
- 15 W usb-c output for a Raspberry Pi or other devices.

– over-current, short-circuit and thermal protection on every rail, as specified by each regulator's manufacturer. Only the Pololu D36V50F5 is comparable, at over twice the price for one rail.
– local supply and support in the UAE.

4 built for

Robot electronics, such as a Raspberry Pi, a microcontroller and sensors, on 3S teaching rovers and arms. One 3S to 6S LiPo in, everything powered, no adapter boards. OHM pd-1 also pairs beside a drone PDB where a build needs motor current or battery sensing.

5 sources

[1] OHM pd-1 datasheet, rev 1.2, November 2026. www.ohmengineering.systems/docs/ohm-pd-1-datasheet.pdf

[2] Matek PDB-XT60, FPV24. https://fpv24.com/en/matek-systems/matek-pdb-xt60-w-bec-5v-12v

[3] Maxstiv CC3D dual-BEC PDB, desertcart.ae. https://www.desertcart.ae/products/30692599-maxstiv-cc3d-flight-controller-5v-12v-dual-bec-pdb-power

[4] Matek PDB-HEX 12S, GetFPV. https://www.getfpv.com/matek-pdb-hex-2-12s-pdb-w-bec.html

[5] Matek PDB-HEX 12S, openelab. https://openelab.io/products/mateksys-pdb-hex-12s

[6] Holybro PM02 V3, GetFPV. https://www.getfpv.com/holybro-apm-power-module-12s-pm02-v3.html

[7] Holybro PM02 V3, PX4 documentation. https://docs.px4.io/main/en/power_module/holybro_pm02.html

[8] Pololu D36V50F5. https://www.pololu.com/product/4091

[9] LM2596 module, Besomi UAE. https://besomi.com/ae_en/depd0023-lm2596-dc-dc-step-down-power-supply-module-input-4v-35v-output-125v-30v.html