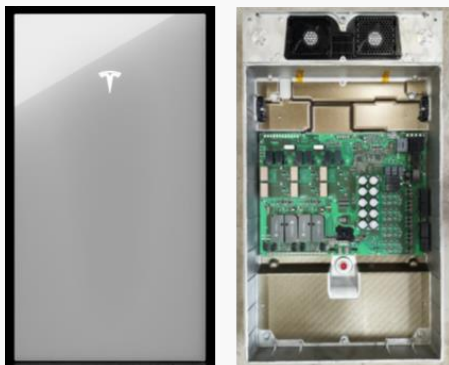


Home Storage Battery: Tesla Storage Battery POWERWALL3 Teardown Report



Appearance:
<https://naked solar.co.uk/storage/tesla-powerwall-3/>

TESLA PowerWall3 exterior & inside

Product Key Features

Tesla Powerwall 3 is a next-generation home energy storage system that significantly improves on its predecessor, the Powerwall 2. It maintains a 13.5 kWh energy storage capacity but delivers a much higher continuous power output of **11.5 kW**, allowing homeowners to run more appliances simultaneously — including heavy loads like air conditioners and electric ovens. Its peak output reaches **13.5 kW**, and backup power during outages is boosted to **7 kW**, supporting whole-home backup instead of just essential loads. A major upgrade is its integrated solar inverter, supporting up to six solar inputs with **97.5% efficiency**, which simplifies installation and improves overall system performance. The Powerwall 3 also adopts **Lithium Iron Phosphate (LFP) battery**, known for superior safety, thermal stability, and longevity compared to traditional lithium-ion batteries. Up to **four units** can be connected, offering a combined storage capacity of 54 kWh for larger homes or increased energy independence.

<https://energylibrary.tesla.com/docs/Public/EnergyStorage/Powerwall/3/Datasheet/en-us/Powerwall-3-Datasheet.pdf>

[Manufacturing process: Building Powerwall 3 | Tesla - YouTube](#)

Report Contents

This product utilizes Tesla's leading-edge technologies, including planar transformers for reduced thickness, an air-cooled structure, and a long rigid FPC (1200 mm) for battery-to-battery connection and battery controller integration. It combines photovoltaic input, energy storage, and output on a single board. This teardown report (31 pages) includes

- Product teardown, component identification and size measurement
- Identification of key ICs (including datasheet which we found)
- Connection among PCBs and Modules

Report Price and lead-time

Please contact us for report pricing.

Deliver one week after official order

Table of Contents

			Page
<u>Summary</u>			
Table 1	Product overview	...	3
<u>Overview</u>			
Fig. 1	Product appearance	...	5
Fig. 2	Label	...	6
Fig. 3-1	Product teardown (Fron side-1)	...	7
Fig. 3-2	Product teardown (Fron side-2)	...	8
Fig. 3-3	Product teardown (Back side-1)	...	9
Fig. 3-4	Product teardown (Back side-2)	...	10
Fig. 4-1	Battery pack (Battery management PCB) (1)	...	11
Fig. 4-2	Battery pack (Battery management PCB) (2)	...	12
Fig. 4-3	Battery pack	...	13
Fig. 5-1	Communication PCB Module	...	14
Fig. 5-2	Communication PCB	...	15
Fig. 5-3	Communication PCB Moisture-proofing material	...	16
Fig. 5-4-1	Communication PCB Key ICs (1)	...	17
Fig. 5-4-2	Communication PCB Key ICs (2)	...	18
Fig. 5-4-3	Communication PCB Key ICs (3)	...	19
Fig. 6-1	Main PCB	...	20
Fig. 6-2	Main PCB Moisture-proofing material	...	21
Fig. 6-3-1	Main PCB Key ICs (1)	...	22
Fig. 6-3-2	Main PCB Key ICs (2)	...	23
Fig. 6-3-3	Main PCB Key ICs (3)	...	24
Fig. 6-3-4	Main PCB Key ICs (4)	...	25
Fig. 6-3-5	Main PCB Key ICs (5)	...	26
Fig. 6-3-6	Main PCB Key ICs (6)	...	27
Fig. 6-3-7	Main PCB Key ICs (7)	...	28
Fig. 6-3-8	Main PCB Key ICs (8)	...	29
Fig. 6-3-9	Main PCB Key ICs (9)	...	30
<u>Connectivity</u>			
Fig. 7	Connection among PCBs and Modules	...	31

