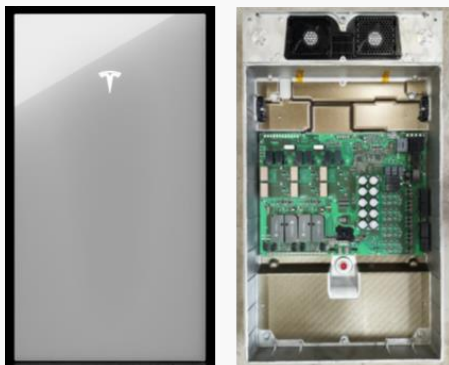


## Home Storage Battery: Tesla Storage Battery POWERWALL3 Teardown Report



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

Note: LTEC is planning to create detail circuit analysis report.

# 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   |

