

A decorative graphic on the left side of the slide, consisting of white lines and circles on a blue gradient background, resembling a circuit board or a stylized tree structure.

ENERGY INDEPENDENT@HOME

SYSTEM DESIGN

PV MODULES

- SunPower SPR-X22-360
- 360 Watt Voc 69.5V Isc 6.48A
- 75 panels : 5 x 15 panel arrays
- 15 panel array:
 - string of 7 panels : 513V (Voc)
 - string of 8 panels : 560V (Voc)

SOLAR INVERTER - INPUT

- 2 x Sunny Tripower 12000TL-US
 - 2 MPPT controllers in each inverter (Inverter1: 38 panels, Inverter2 : 37 panels)
- Inverter1 mppt1 : 3 strings of 8 560V / 17.8A (parallel)
- Inverter1 mppt2 : 2 strings of 7 513V / 11.9A
- Inverter2 mppt1 : 2 strings of 8 560V / 11.9A
- Inverter2 mppt2 : 3 strings of 7 424V / 17.8A

SOLAR INVERTER - OUTPUT

- Nominal AC Voltage 480V/60Hz 3phase
- Max AC Current : 14.4A
- AC power 12kW
- AC apparent power 12kVA
- 98% efficiency

TESLA POWERPACK / INVERTER

- 70 kVA / 480V / 60Hz / 3-phase
- Powerpack Configuration 4 hr 58kW / 232kWh capacity
- AC Efficiency 89.5% round-trip
- PN1490025-00-A
- PN1134768-21-A

POWER TO HOUSE

- Panel 1 480V panel
 - From Solar inverters 2 x 20A
 - To Tesla system 1 x 125A
 - To house 208V panel / via transformer 1 x 100A
- Transformer 480V Δ / 208V Δ 75kVA
 - Primary coil 100A / 480V / 3-phase $\rightarrow$ secondary coil 200A / 208 V / 3-phase
- Panel 2 208V / 200A / 3-phase house main service panel

SITE CONTROLLER

- Small service processor in separate housing including 24port switch
- 3G horn to communicate with Tesla (without requiring Internet)
- SC is also connected to home network
- Network switch connects SC to PowerPack Inverter and 2 AccuEnergy meters
 - Meter 1 measures solar output from inverters
 - Meter 2 measures site (house) consumption / draw

SMA DATAMANAGER

- Service processor for SMA Solar inverters
- Connects through home network -> ennexos.sunnyportal.com
- Sends inverter data to SMA site
 - Note: not used by Tesla