

# CASE STUDY

## Toyota Coaster Conversion



***We installed two 12V 200AH lithium batteries into a Toyota Coaster that was being converted to an RV.***

The Toyota Coaster is a great platform to turn into a motorhome and there are very affordable older vehicles ready to convert. A handy DIY person with some patience and the right advice can convert this solid base into a van that offers all the luxuries of vehicles that can cost up to 5 times the price.

The Toyota Coaster has a large roof area that can easily mount 1000W of solar panels and a simple internal floor plan that offers lots of options for fit out.

On the electrical system design here are a few tips worth considering.

### **Standard house solar panels offer the best value for money:**

In this case we were able to use 4 x 250W solar panels 1600mm x 1040mm in size.

We put these into 2 parallel strings of 2 panels. The roof of the coaster offers an ideal mounting base and two long single rails were mounted to the roof using Sikaflex marine grade adhesive.

### **Use standard appliances:**

Internal appliances such as microwaves, fridges and coffee machines were all able to be standard 240V appliances. Enjoy the specials at the big retailers and the massive 2<sup>nd</sup> hand market to buy standard appliances. This is far cheaper than buying expensive 12V caravan specific options.

### **Use 12V storage although the van is a 24V System:**

You could use either a 24V or 12V batteries. With the LBS integrated DC-DC converter and VSR you can connect to either a 24V or 12V start battery system. By choosing 12V you don't have any external converters to supply the 12V output for loads.

### **Use redundant design principles:**

In this set up we essentially split the system into 2 systems in parallel. Each system had 2 panels, feeding into one LBS-12200-ME-AIP and 1 AC charger. If any component fails then the system still can run at half capacity until the fault is fixed which can be an important design feature if you are well off the beaten track.



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### What we installed:

- 4 x 250W solar panels
- 2 x 200Ah of 12V lithium battery capacity
- Integrated solar and DC chargers in the batteries
- 2 x 25A AC chargers
- 2kW AC inverter
- DC 12V switch panel
- AC switch panel and inlet hardware
- Monitoring Screen



**LBS-12200-ME-AIP**  
**12V 200Ah Lithium Battery**



*"A high end set up at an affordable price. By the time you save the powered site camping fees and take the option to free camp you can pay for your system in under a year.*

*Coasting around the country seeing the sights doesn't mean you have to miss out on the simple comforts of living a comfortable life.*

*A good coffee in the morning from a coffee machine, air conditioning for a couple of hours to take the edge off a hot day, catching up on the news on the TV and popping a snack into the microwave are not considered over the top luxuries but for the standard camper there were options you could only take up if you were connected to permanent power."*

CONTACT US

E: [sales@lithiumbatterysystems.com.au](mailto:sales@lithiumbatterysystems.com.au)

M: Chris Carrigan 0404 041 189

W: [lithiumbatterysystems.com.au](http://lithiumbatterysystems.com.au)



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