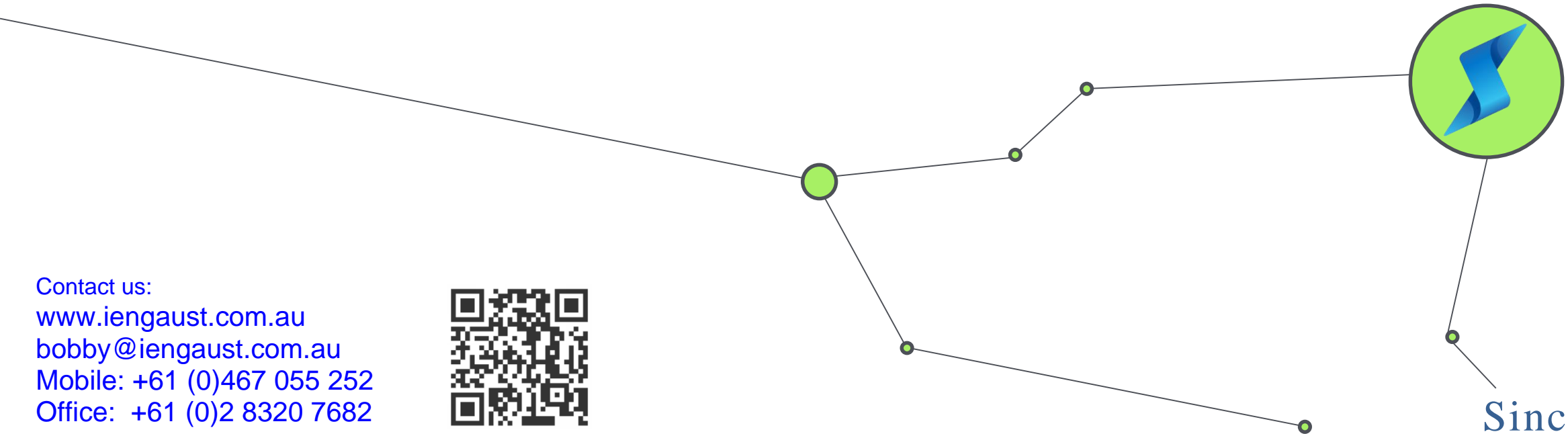




Electric Bus Auto Charging Solution

Electric bus charging solution quickly



Contact us:
www.iengaust.com.au
bobby@iengaust.com.au
Mobile: +61 (0)467 055 252
Office: +61 (0)2 8320 7682



Since 2017

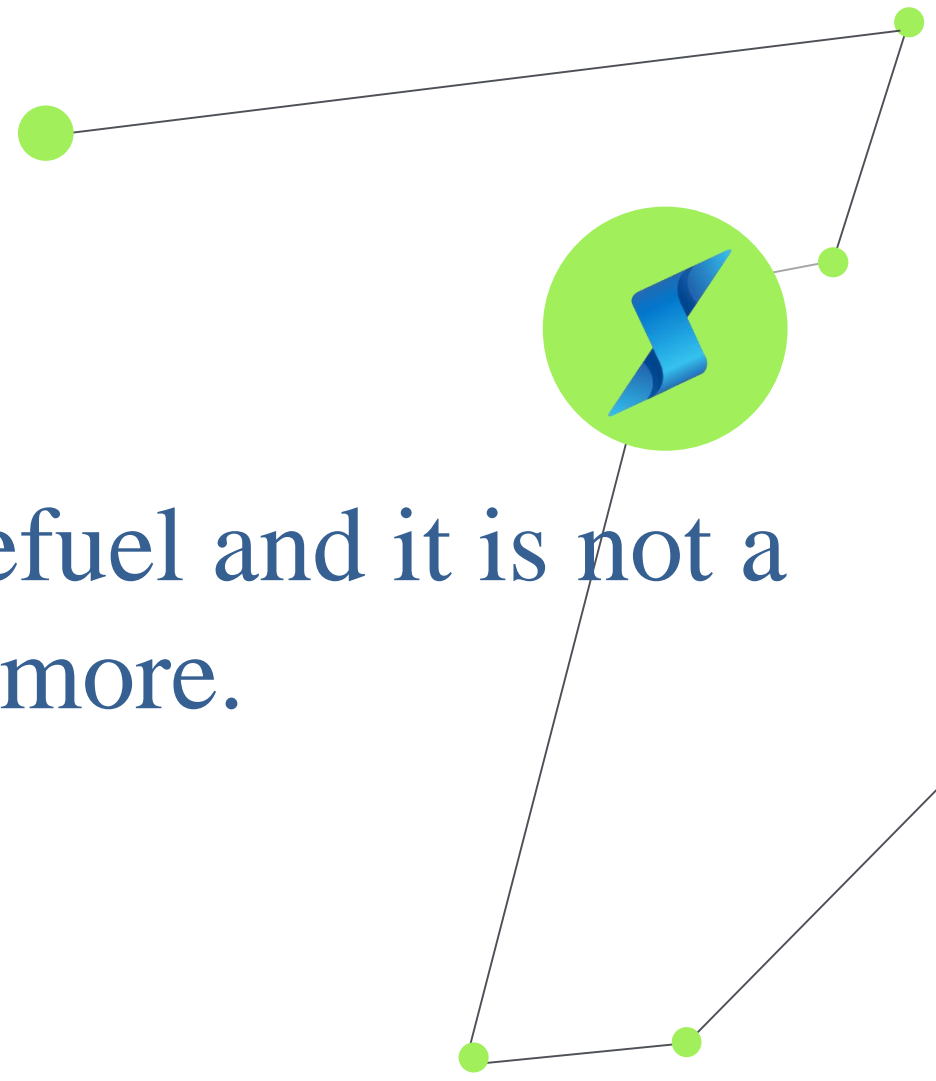
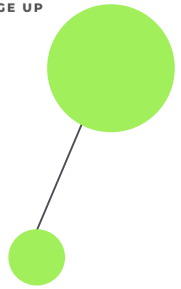


The Leader Of Top Charging Solution



iPower series of EV charging equipment Mainly develop and produce large power charging device with the advantages of stability, reliability and durability. Main product is large power charger, charging pile, on board power, charging cloud service and so on Charger matches with each new energy bus industry and national first class enterprise.





Charging is as fast as refuel and it is not a theory anymore.

The Background To Put Forward Proposal

Main problems of plug in type charging:

1. Long charging time
2. Covering big area
3. Special person on duty for charging
4. Large battery capacity
5. Serious connector burnt by big current



The First-Generation Auto Charging Solution

iPower makes innovation of current charging method from hardware to software based on GSCS-K01 type "Electric bus auto charging device "researched and manufactured by high-speed train group power supply and solve connector type charging pain:

1. Truly realize large current fast charging(charging current 300-700A), and complete charging time shortens to 6 minutes(10C);
2. Shorten needs for charging device;
3. One key charging and charging process no need for special person on duty for charging during charging process;
4. Fast charging technology decrease electric bus battery capacity and reduce battery loss.
5. The touch part adopts top-class high-speed train group pantograph skateboard and charging is fast and safe.



The 2nd Generation Auto Charger Solution

iPower innovates more elegant integrated fast charging device GSCS-K02. Same as first generation plan, the second generation solve the disadvantages of gun type charging. It combines charger main body with pantograph, which seems more elegant.

Integral, strong and modern, it adopts large body cutting building body, combining extending shape with pantograph to make pantograph become natural stretch of charging rack.



Comparison of 1st Generation and 2nd Generation



On board type(increase vehicle cost and weight)

WIFI communication(signal disturbance unstablized)

Charging rack seperate from charger.



Pantograph integrated machine(decrease vehicle cost and weight)

Carrier wave communication mode(signal transportation is more reliable)

Unique grounding protection

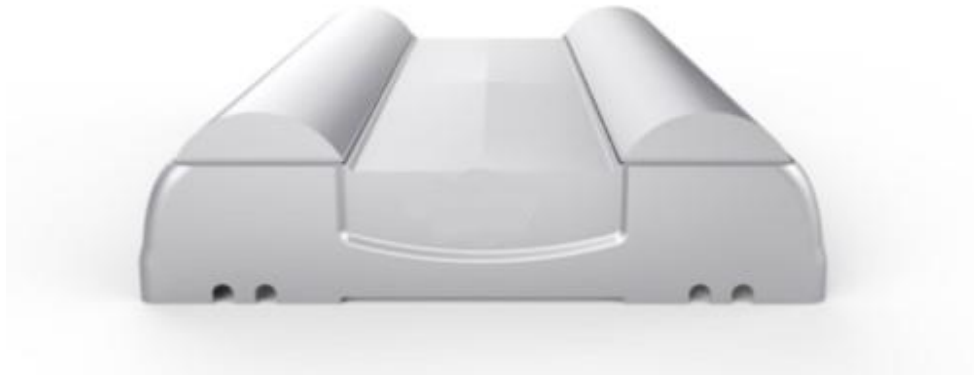
Pantograph hidden type(safe and reliable and easy for maintenance)

Pantograph and charger to one(decrease installation and area coverage)

2nd Generation Auto Charging Solution Picture



2nd Generation Roof Coverage Device Picture



Core Technology



The solution includes many core technologies and most of them high speed train and bullet train specialized technology:

1. Special airline level aluminum and magnesium alloy pantograph, high strength, light weight, which adopts many bullet train groups' pantograph standard and technology.
2. Contactor adopts unique alloy material technology and only one high grade material which pass 700A current nationally.
3. Adopts Internet of Things and cloud platform design principle, backend can wirelessly monitor operation condition of each power based on quantity of electricity and location of each bus for intelligent dispatching.
4. Control system adopts high speed rail rising and falling bow control system.
5. Adopting carrier wave communication mode to make charging data transportation more safe.
6. 300-600kW large power charger.
7. Integrated charger adopts water cooling system to make property reliable and stable.
8. Separated charger adopts air cooling charger.



Auto Charging System



Charging Rack



Separate Charger

Charging Process



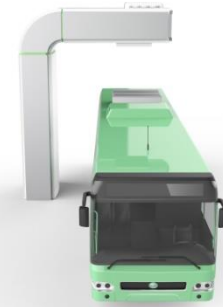
① At the Station



② Pantograph Declining



③ During Charging



④ Charging Finished

Charging station is set at the beginning, end or transfer intersection of public transportation, use rest gap at beginning, end port and fast charging to EV public bus and nobody specialized for charging process:

- ① Enter Charging Location;
- ② One Key Declining Pantograph;
- ③ Charging Begins From Charging Rack;
- ④ Charging Finished, Take Pantograph Back And Vehicle Leaving Charging Position.

Characteristics Of Auto Charging System Solution



① It meet the current bus vehicle operation characteristics.

Use vehicle waiting frequency gap(5-10 minutes) to realize fast charging and there is no need long time outage for charging.

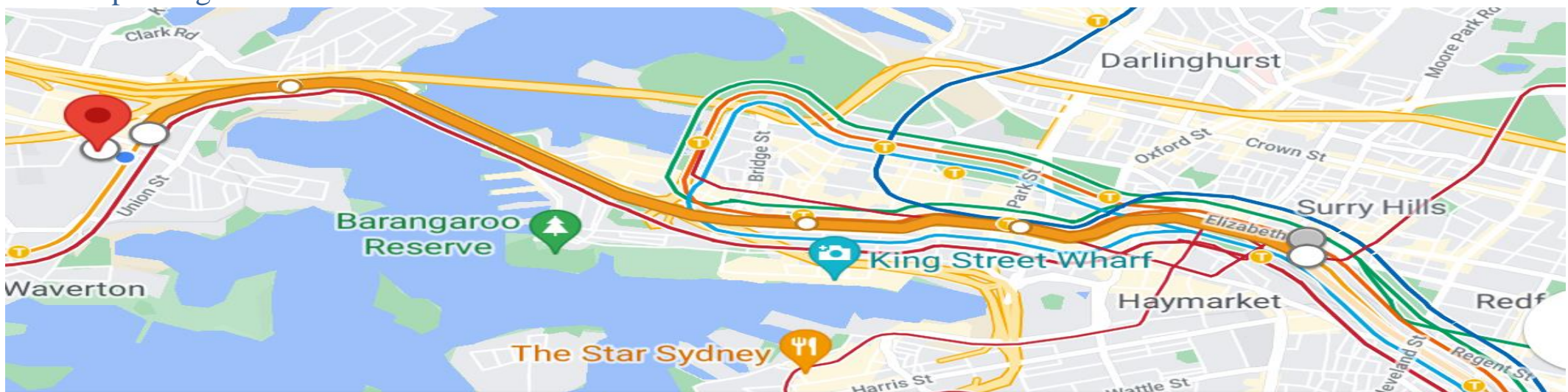
Auto Charging System Solution Characteristics

② Station location covering small area

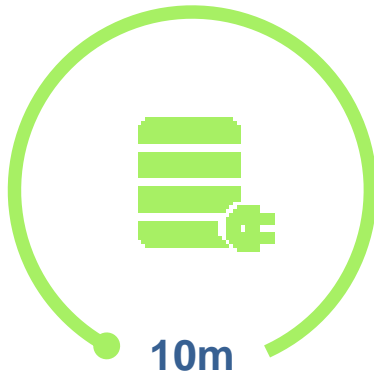
Set up fast charging station only at the start/end terminal of routine;

Small quantity of charger and small area covered by station location;

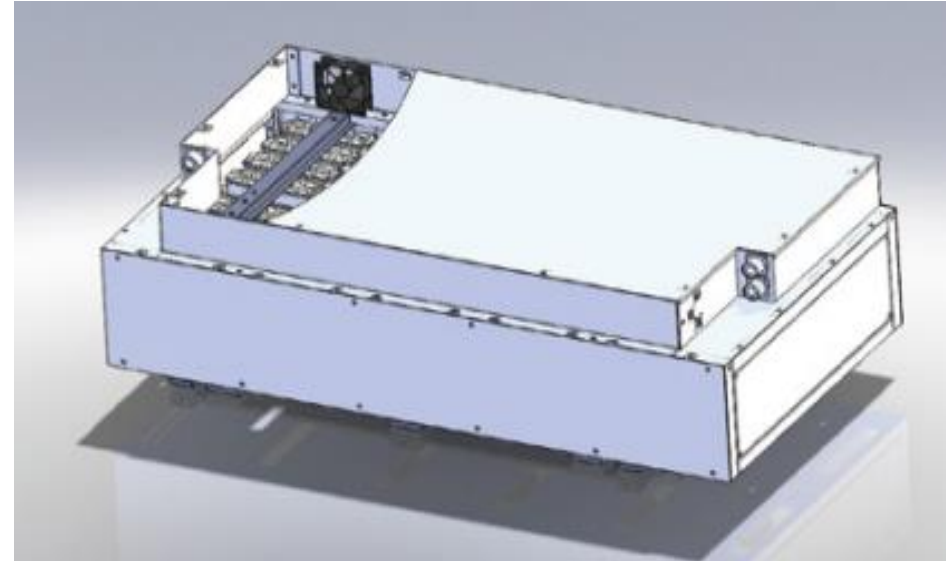
Charging station also meet the charging requirement of pure electric passenger vehicle.



Automatic Charging System Solution Characteristics



③ Fast speed and low cost



Due to fast charging speed, fast bus can equip small quantity battery group, which meet single or round duration, the cost of battery group decreases largely compared with original design 250-300kWh, and weight decreases largely, which make pure electric bus production cost, acquisition cost and operation cost decrease largely. Bus company will not add extra operation economic pressure.

Auto Charging System Solution Characteristics



④ Large power fast charger

Efficient and fast charging solution changes from one charger charging two vehicles per hour at most to one charger charging 6 vehicles per hour at most, 3 times higher efficiency, which decreases charger quantity for charging station and save cost.

Auto Charging System Solution Characteristics



Connector type charging



Auto charging system

⑤ High Reliability

Gun type charging: single connector maximum current 250A, two connectors maximum current 500A. But for pantograph charging, charging current is 300-700A, which avoids gun type charging, insert and plug out, which leads burnt out of connector and charger interface, which saves cost to change charging connector periodically.

Auto Charging System Solution Characteristics

⑥ Safety

This solution doesn't require special person on duty during charging session and needs driver operate button on the plate, which improves safety during charging.



References...



Application Case Of Auto Charging System





THANKS

