

CMT050A-LEI/CMR050A-LEI

200W Mid-distance
Magnetic Resonant Wireless Power
48V Vout Transceiver Module

CMT050A-LEI/CMR050A-LEI transceiver module set consists of a transmitter module and a receiver module, carefully tuned to be highly resonant with each other to accomplish efficient wireless power transfer. The transmitter module transmits "resonant power" from the surface area of its antenna (coil) defined by X & Y = power area and to a Z= height, which is the distance from the antenna surface. The receiver module, when positioned within the space defined by X,Y and Z, receives the resonant power and performs the necessary conversions to supply to a system which can be robot, UGV, E-bike, Lawn mower...etc.

Key Features:

- Provide typical 200W output power with low frequency magnetic resonant wireless power technology
- Proprietary BLE signaling protocol
- Z height spatial freedom from 3cm ~ 4.5cm to keep consistent DC to DC end to end wireless power transfer efficiency higher than 85% at 200W output power.
- XY freedom= ± 1 cm while coil to coil distance=3.5cm
- Self-protection while Z height is lower than 3cm
- Passed FCC Part.15B and EN55032 EMC pre-scan
- Can be configured to charge the 48V battery directly

Specification:

| | |
|------------------------------------|--|
| Power Input Interface | DC jack |
| Input Power Requirement | DC: 48V 6.0A |
| Output Power | 200.0 W typ., up to 48V/5A. delivery to the load |
| Power coil Area (X & Y) | 106.4 mm (l) x 106.4 mm (w) |
| Power Distance (Z) | 30mm~45mm (coil to coil) |
| Transmitter dimension | Control board: 80 mm (l) x 80 mm (w) x 14.9 mm (h) Coil board: 106.4 mm (l) x 106.4 mm (w) x 4.1 mm (h) |
| Receiver dimension | Control Board: 80 mm (l) x 80 mm (w) x 14.9 mm (h) Coil Board: 106.4 mm (l) x 106.4 mm (w) x 4.1 mm (h) |
| Coil Type | Litz-wire wound with ferrite |

Electrical Specification:

| Characteristics | Condition | Min. | Typ. | Max. | Units |
|-----------------------------|-------------------------------------|------|------|------|-------|
| Input voltage | | 46 | 48 | 50 | Volt |
| Rated input current | | | | 6 | Amp |
| PRU Output | | | 200 | 240 | Watt |
| Operating Frequency | | | 125 | | KHz |
| (Centered) | System DC-DC efficiency (PTU & PRU) | | 87 | | % |
| | PRU efficiency | | 90 | | % |
| Over Power Protection | | | TBD | | Watt |
| Over Temperature protection | | | | 90 | °C |

Environmental Specification:

- **Operating Condition:**

Temperature range: -20°C ~ +50°C

Humidity: 10% ~ 90 %

- **Storage Condition:**

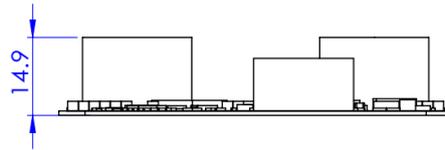
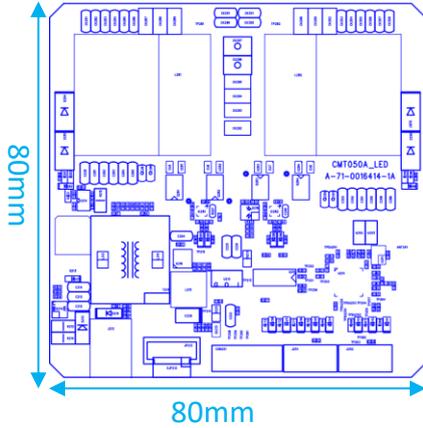
Temperature range: -40°C ~ +70°C

Humidity: 10% ~ 90 %

Mechanical Specification:

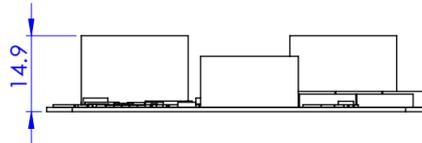
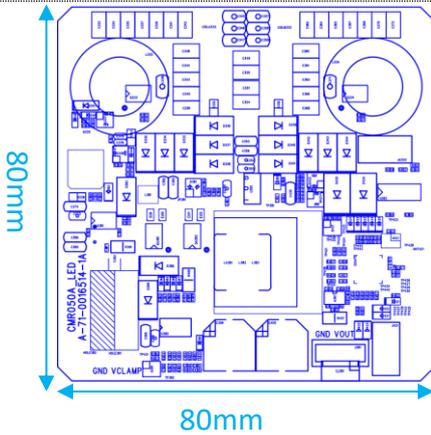
PTU Control Board Dimension

80 mm (l) x 80 mm (w) x 14.9 mm (h)



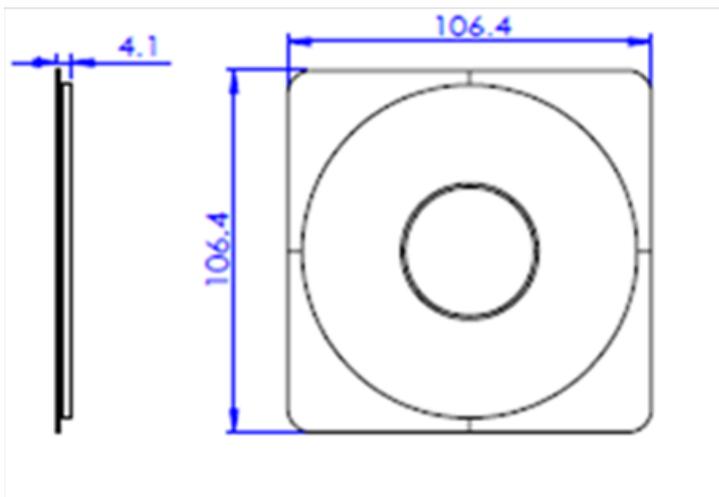
PRU Control Board Dimension

80 mm (l) x 80 mm (w) x 14.9 mm (h)

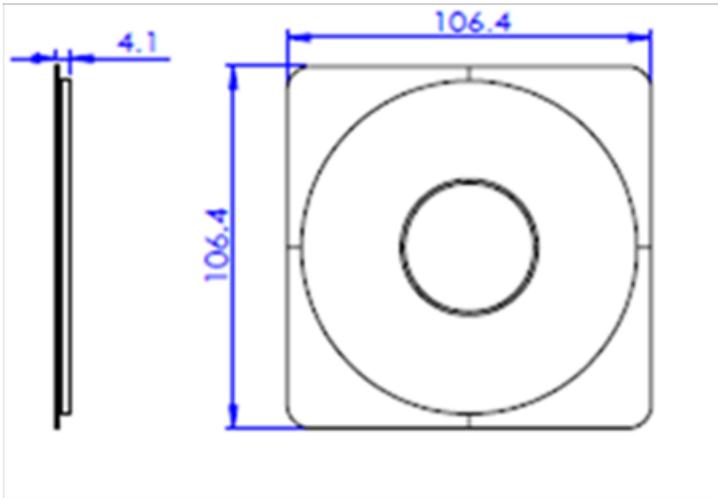


PTU Coil Board Dimension

106.4 mm (l) x 106.4 mm (w) x 4.1 mm (h)



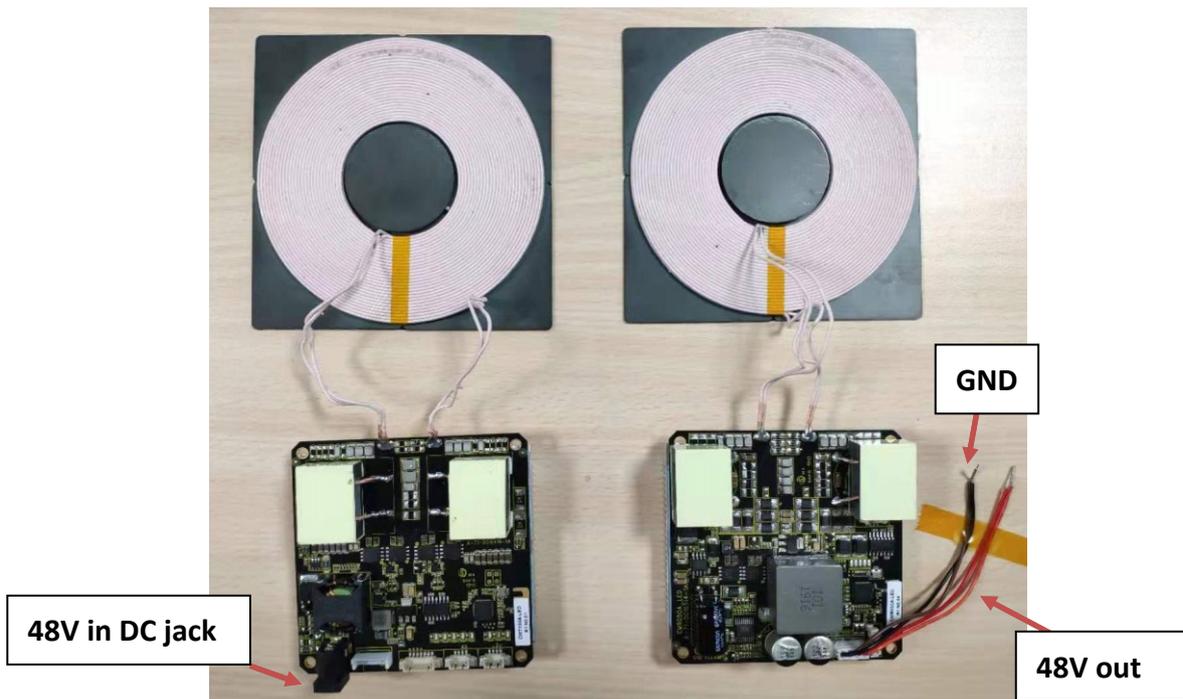
PRU Coil Board Dimension 106.4 mm (l) x 106.4 mm (w) x 4.1 mm (h)



Top View

CMT050A-LEI

CMR050A-LEI



Bottom View

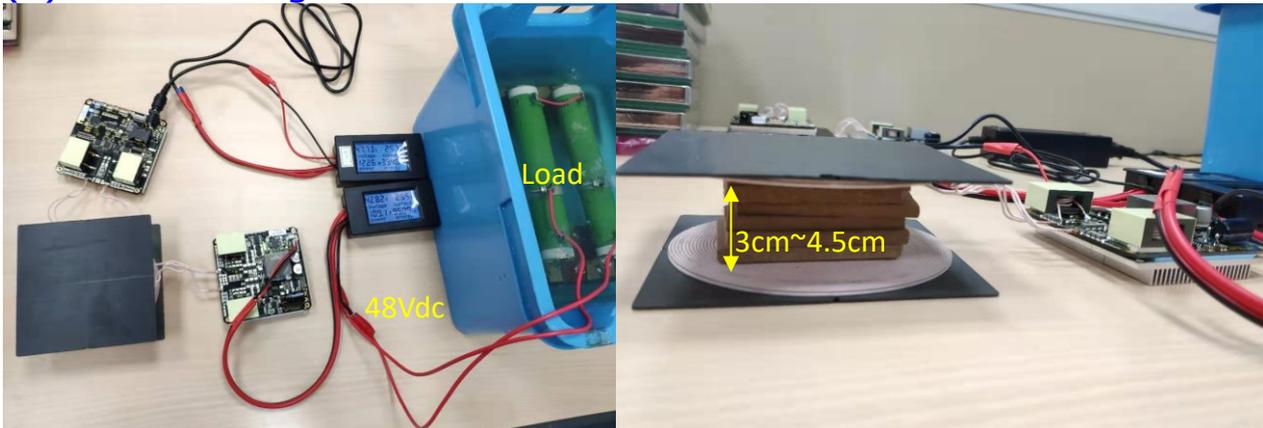
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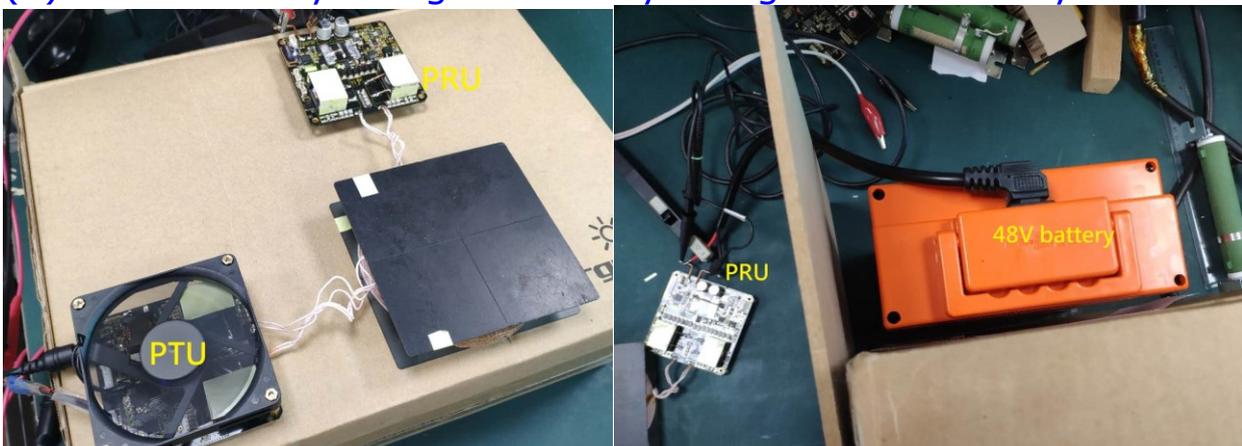


Two kinds of configuration:

(1) As a voltage source: Provide fixed 48V to the load



(2) As a battery charger: Directly charge a 48V battery



**(1) Keep PTU coil away from the large metal area**

Please keep any large metal area at least 10cm away from the PTU coil board at all directions. It's suggested NOT to put the PTU coil board on the metallic desk surface, or please lift the PTU coil board 10cm away from the metallic desk surface without any metal object in between.

(2) Keep PTU coil away from each other if multiple PTUs are turned on

Please ensure the edge to edge distance between any two PTU coil boards on the same surface is longer than 30cm. And DON'T overlap any two PTU coil boards at the vertical direction.

(3) Don't put foreign objects on top of the PTU coil area

Please keep the foreign objects away from the top of the PTU coil area or they can be heated to quite high temperature. The foreign objects include metallic objects, ID cards, credit cards, deposit cards, security badges, passports, and key fobs. However, the glass with low-E coatings are not foreign objects and won't be heated