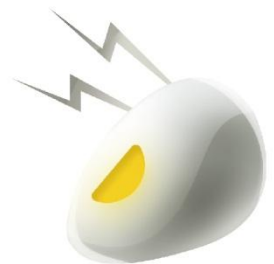
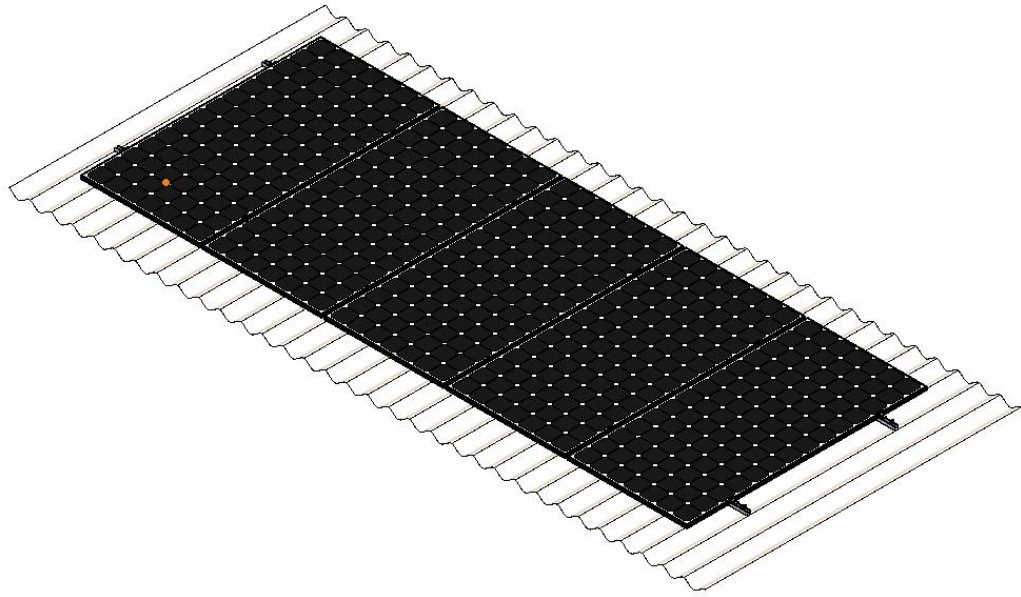


# INSTALLATION INSTRUCTION

## Short Rail Installation Manual



**ANTAI**  
Aluminum & AI Tech for Solar



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# I. Safety Precaution

Thank you for purchasing Antai solar mounting system products. Please refer to this installation manual before installation, operation, maintenance, and inspection.

## •General Notice

- The installation is limited to those who have professional experience and can carry out construction according to the specified items.
- Please abide by national or local building regulations and environmental protection regulations.
- Please comply with the regulations on the prevention of industrial accidents and the relevant regulations of the insurance union.
- Please wear safety clothes. (Especially protective helmets, boots and gloves)
- There must be at least 2 operators during installation to prevent accidents.
- Please always prepare at least one installation manual while installing.

- Please set up scaffolds while working at heights, and carry out construction after eliminating the danger of falling. Please use gloves and seat belts.
- In order to prevent accidents and malfunctions, please do not arbitrarily change the product style.
- Please be careful not to damage the cross section or sharp corners of the mold.
- Please make sure fasteners are all tightened, like bolts, nuts, self-tapping screws, etc.
- Please be careful not to touch the profile section while working on electrical wiring and grounding constructions, which may damage the wiring.

- Please use our designated products and do not arbitrarily transform and change them.
- Please avoid strong collisions in case any deformations and scratches occurred.
- This manual is related to the installation of the mounting system. Please consider the mounting system during the construction of the foundation, components, inverters, and electrical wirings.

## II. Introduction

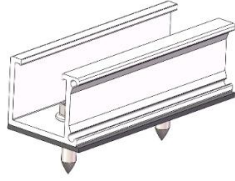
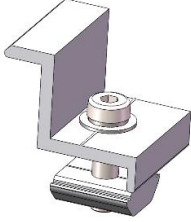
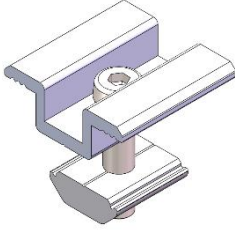
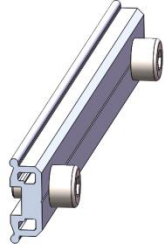
ANTAI metal roof system is a roof photovoltaic support system applied to metal roof. The whole system has few accessories, which saves the installation time and cost. It is an efficient solution for large-scale metal roof project.

Please read the manual carefully before installation.

## III. Tool

			
8mm Inner Hexagon Spanner	Electric Drill	Tape Measure	Thin Marker
			
Torque Spanner	String	Adjustable Wrench	Socket wrench (M8)

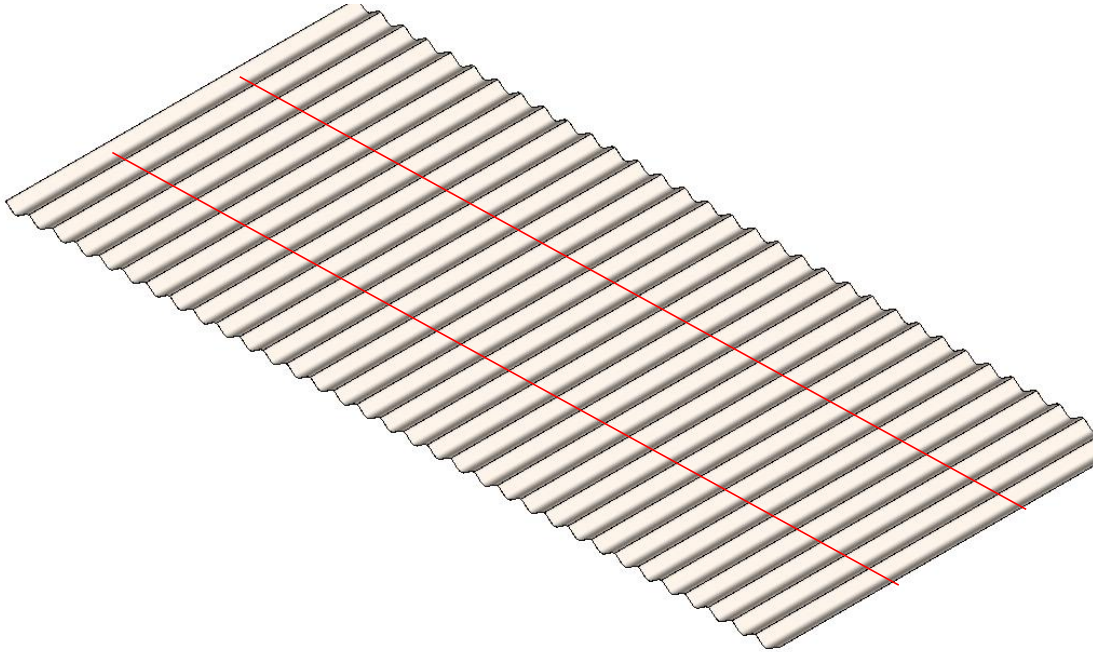
## IV. Component

Main component list			
			
Short Rail	End Clamp	Mid Clamp	Rail Splice

## V. Installation Instruction

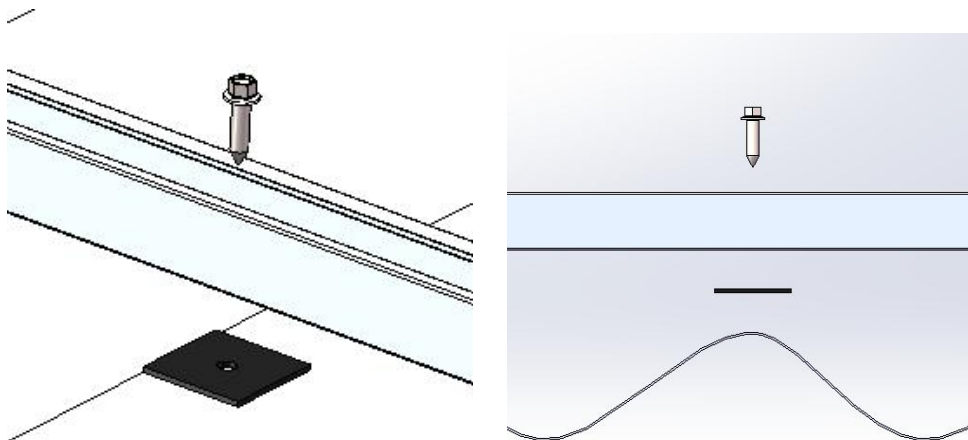
### 5.1 Positioning

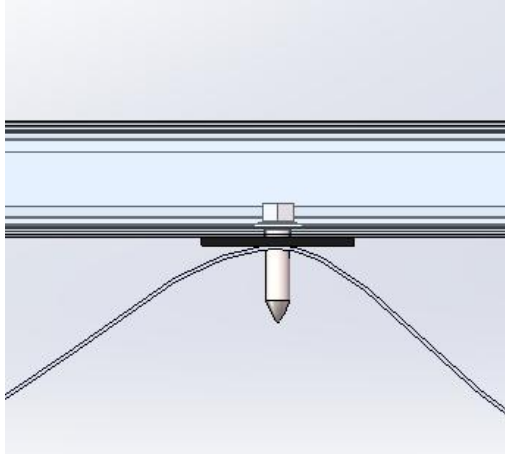
5.1.1 Mark the positions of screws on metal roof and make sure they are at the same horizontal line.



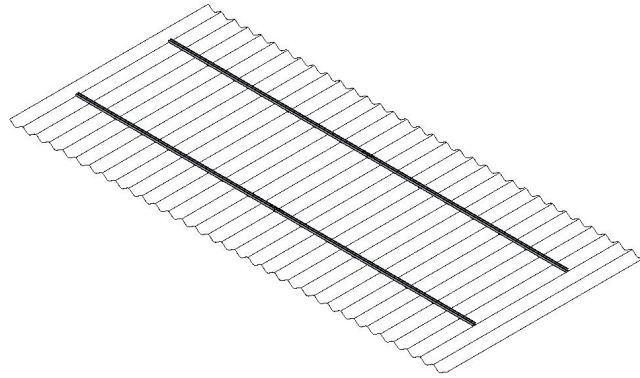
### 5.2 Rail Installation

5.2.1 After adjusting the position of the Short rail, fix it with self-tapping screws. The length of Short rail shall be selected according to the shop drawings.



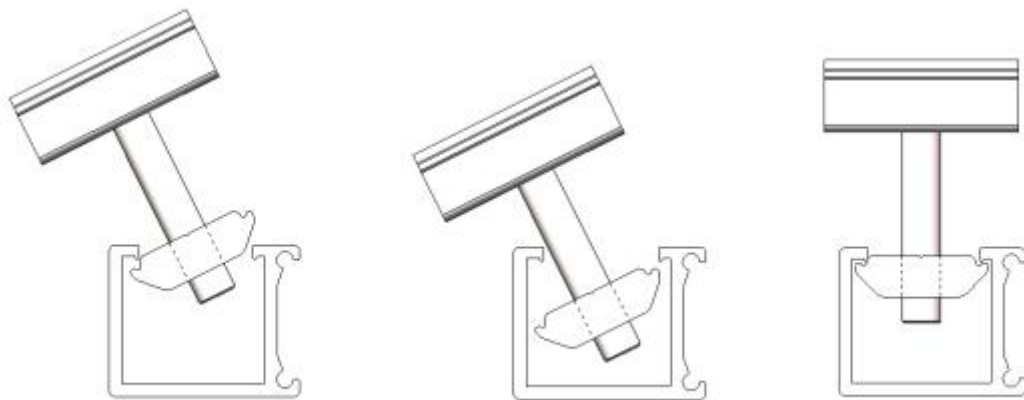


5.2.2 Repeat the above steps to install the rest rails.



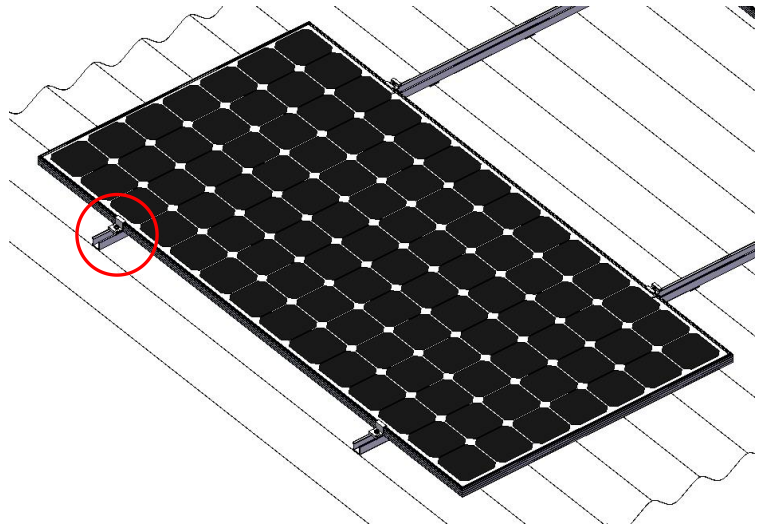
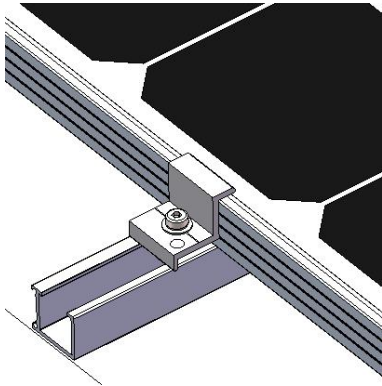
## 5.3 PV Module Installation

According to the shop drawing, place the PV module on the rail and fix them with end clamps, mid clamps.



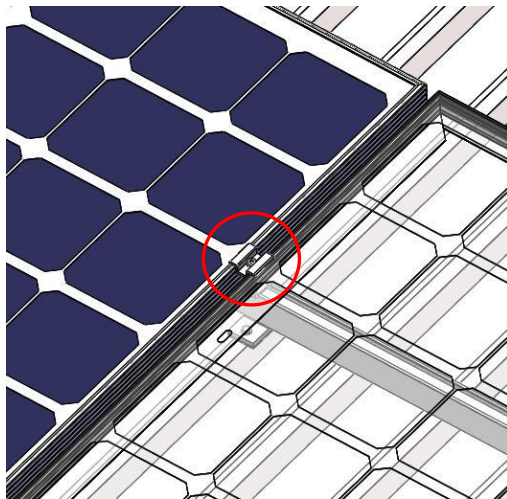


5.3.1 Place the PV module on the rail and adjust the position according to the drawing. Then place the end clamp into the rail groove and fix them with bolts.

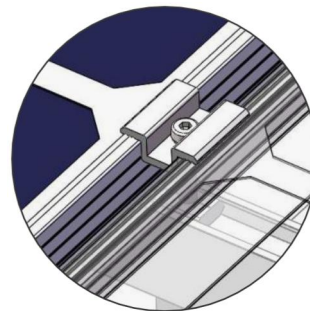


M8×30 Hex bolt  
Flat washer  
Spring washer  
T module

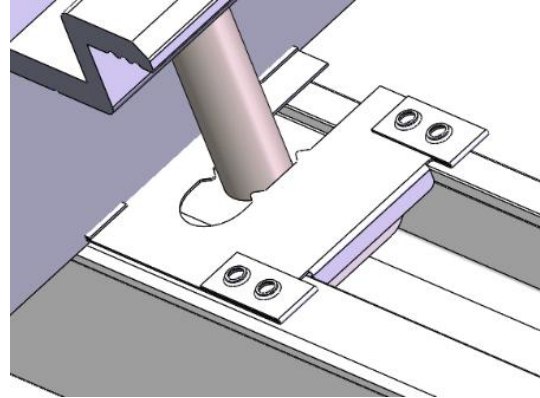
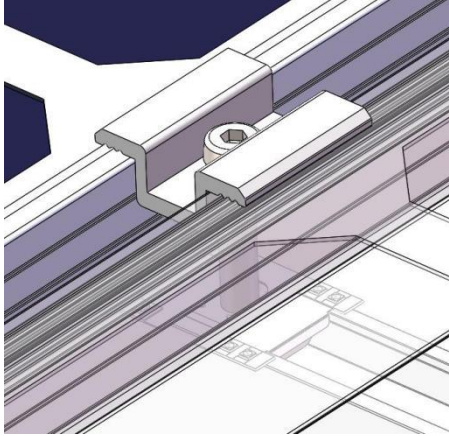
5.3.2 After fixing the end clamp of first PV module, please put the second PV module on the rail at proper position. Connecting firmly the first PV module and the second one with mid clamp and fixing tightly with bolts.



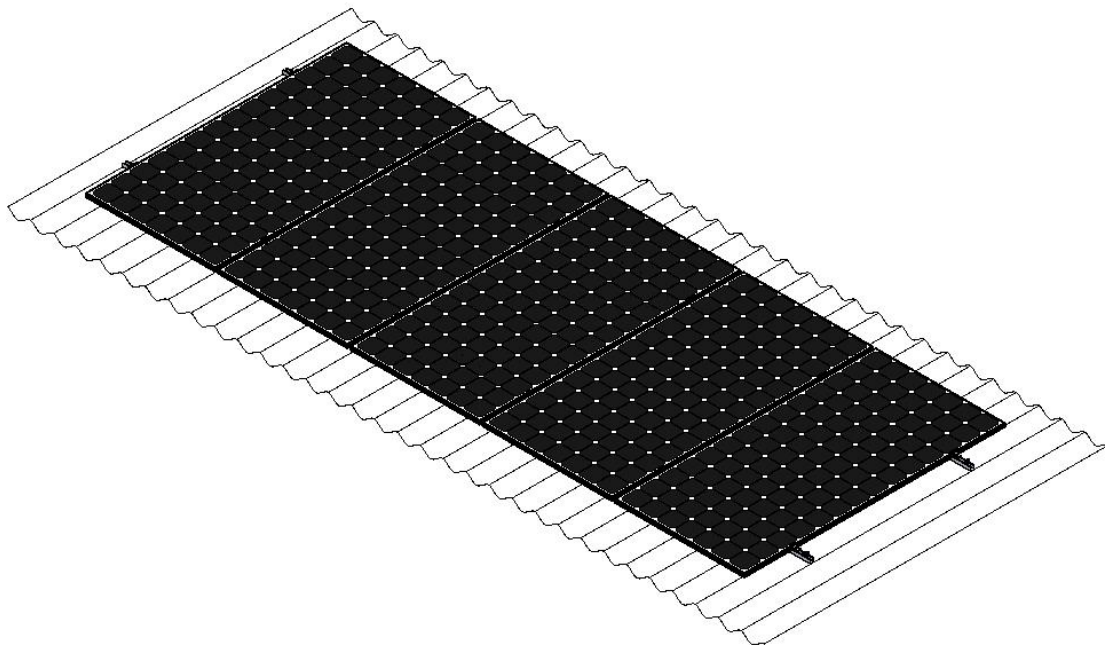
M8 Hex bolt  
Spring washer  
T module



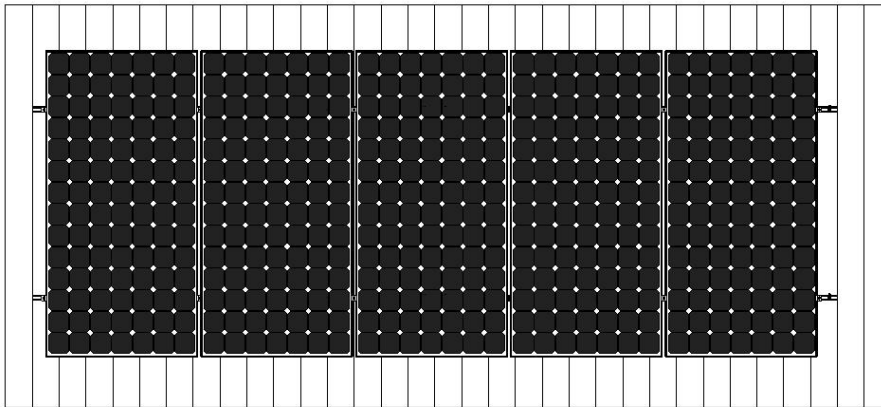
5.3.3 If there are earthing clips needed, place them between the PV modules and rails while installing the mid clamps. Adjusting the position to ensure the sharp spikes on earthing clips are pressed by both PV modules. Then tighten the mid clamps by bolts.



5.3.4 Repeat the steps above. When it comes to the last PV module, fix it with the End clamp and tighten it with bolts.



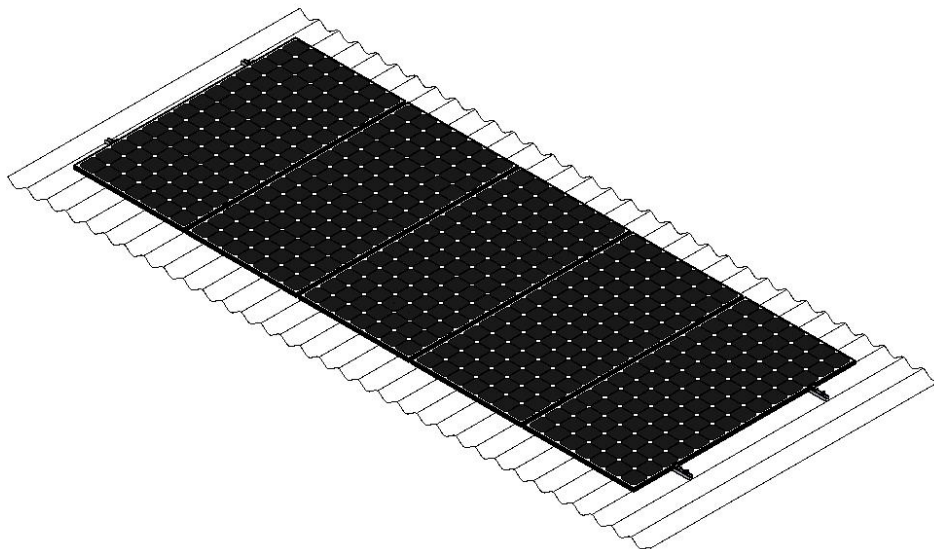
## 5.4 Installation Completion



Top view



Side view



Axonometric view

## VI. Notice

### 6.1 Dimension

The specific dimensions of engineering installation shall be subject to the engineering construction drawings. This installation manual is only for the instruction of product installation method.

### 6.2. Fastener

Because of the good ductility for stainless steel, fasteners have big difference with carbon steel one in nature. If used in inappropriate way, it will result in bolts and nuts being locked-up. To avoid this situation, please follow the solutions below:

#### 6.2.1.Reducing the friction coefficient:

- (1) Ensure that the screw thread surface is clean (no dust, gravel etc.)
- (2) Use wax or lubricant during installation. (Such as butter, 40 # engine oil);

#### 6.2.2.Correct method of operation:

- (1) Must be perpendicular to the axis of the screw thread when screwing, can never be tilt.
- (2) During the tightening process, strength needs to be even.
- (3) Use torque wrenches or socket wrenches if possible, avoid using adjustable wrenches or electric wrenches. (If so, pls try to reduce the speed.)
- (4) Do not use it when the temperature is high. Do not use it with high speed spin to avoid being locked-up due to the rapid rise of temperature. (Such as electric wrench, etc.)

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