

# CPM 8/16

## Combiner Box+ Controller



### Product Introduction

The base station parallel stacked photovoltaic system developed by IPANDEE is specifically for the green energy power generation of communication base stations to "reduce carbon emissions and reduce costs", and is committed to helping operators achieve low-carbon goals and carbon neutrality; Passed the test of domestic authoritative third-party testing center certified by CMA and CNAS; IPANDEE's stacked photovoltaic system consists of adapters and intelligent stacked photovoltaic combiner boxes. All adapters are connected in parallel to photovoltaic modules, and each photovoltaic module is tracked and adjusted by MPPT. The stacked photovoltaic system is connected to the DC busbar of the existing switch power supply in the equipment room, and photovoltaic power generation is prioritized to power the base station; IPANDEE stacked photovoltaic system does not affect or control the original power supply system, and is only embedded in the electrical connection, and can be connected to any existing switch power supply system in the equipment room; IPANDEE stacked photovoltaic system has a dynamic voltage tracking function, which monitors the DC output bus voltage in real time to ensure that the photovoltaic system has priority in power supplying and maximum power output, and the shortfall voltage is dynamically supplemented by the DC power supply system.



### Key Strengths

- **High Efficiency:**  
MPPT tracking efficiency is 99.9%, conversion efficiency is 99%, and MPPT tracking efficiency is not affected by shadows or occlusions.
- **High Quality:**  
adopts TI's DSP plus all-ceramic capacitors, supporting full-load operation at an ambient temperature of 80°C
- **High Stability:**  
equipped with input and output reverse connection protection, input overvoltage and overload protection, and base station feeder protection;
- **High Security:**  
supports background remote shutdown, external emergency stop switch of combiner box, etc.;
- **High intelligence:**  
adopts two-way PLC carrier communication to monitor the working condition of each PV at all times;
- **Easy Installation:**  
equipped with user-friendly interface and remote voltage sampling; easy to operate and quick to install;
- **Easy maintenance:**  
The adapter supports online replacement and intelligent operation and maintenance on the cloud platform;

## Controller

Model	AX550	AX650
MPPT Efficiency	≥99%	
Conversion Efficiency	≥98%	
Standby Power Consumption	≤1.5W	
Heat Dissipation Method	Heat Sink Cooling	
Rated PV Input Power	550W	650W
Start Charging Vstart-PV	≥10V	
Input Operating Voltage Range	10-60V	
MPPT Operating Voltage	25-55V	
Input Under Voltage Protection/ Recovery	Factory Default Setting: 20±0.5Vdc/25±0.5V (Variable)	
Input Over Voltage Protection/ Recovery	Factory Default Setting: 60±0.5Vdc/57±0.5V (Variable)	
Maximum Input Current	15A	17A
Rated Output Voltage	57VDC	
Output DC Voltage Range	Output Range: 40V-60VDC (Factory Default Output: 57VDC, Variable)	
Battery Type	48V System	
Dynamic Voltage Regulation	Equipped (Together with PV Intelligent Combiner Box)	
Output DC Current	≤14A	≤16A
Charge Mode	Fast Charge (Constant Current), Equalized Charge, Float Charge	
Communication	PLC Carrier Communication (to Combiner Box)	
Physical Address	4 Position DIP Switch (16 Possible Combinations)	
Monitoring	PC/Wi-Fi Module/4G/Ethernet	
Protection	Reverse Discharge, Input Over-Voltage and Under-Voltage, Output Over-Current, Voltage Regulation, Reverse Polarity, Battery Detachment, Overcharge, Over-temperature, Over-temperature Load Reduction Operation	
Grounding	MC4	
Installation	Under the PV Component/ Rack	
Product Dimension	152*86*39mm	
Product Weight (kg)	0.75Kg	
Operating Ambient Temp.	-40°C~+85°C (-40°C~+60°C Full Load Operation)	
IP Rating	IP68	
Operating Altitude	≤4000m (At 3000m~4000m, for every 100 meters of altitude increase, the operating ambient temperature decreases by 1°C)	

## Combiner Box

Model	CPM 8	CPM 16
Standby Power Consumption	≤4W	≤6W
Maximum Input Current	128A	256A
Maximum DC Voltage	60V	
Input Voltage Range	10-60V (Recommended 40-60V)	
Fusing Ability of Each Channel	25A	
Insulation Resistance	≥2MΩ	
Surge Protection	Nominal 20KA, Maximum Discharge Current 40KA, Voltage Protection Level (Up) ≤80V	
Parameter Display	System Operation Data/ Components Operation Data	
Emergency Stop Button	Equipped (to Interrupt Output and Bus Bar)	
Communication	Controller to Combiner Box: PLC Carrier Communication/ Combiner Box to Outside: Modbus_RS485	
Display	160*160 LCD Display	
Monitoring	PC, Wi-Fi Module, 4G, Ethernet	
Installation	Wall-Mounted, Racked-Mounted, Pole-mounted	
Product Dimension	380*385*95MM (without Mounting Ear and Pole Mounting Kit)	450*395*115MM (without Mounting Ear and Pole Mounting Kit)
Product Weight (kg)	6.36Kg	8.12Kg
Operating Ambient Temp.	-40°C~+60°C	
Storage Temperature	-40°C~+70°C	
IP Rating	IP66	
Operating Altitude	≤4000m (At 3000m~4000m, for every 100 meters of altitude increase, the operating ambient temperature decreases by 1°C)	