SOLINTEG & TIGO INTEGRATION SOLUTION

INTEGRATE SOLAR INTELLIGENTLY

100%
100%
75% to 95%

Brief Introduction

What is the use of power optimizers?

It is common that the solar panels will be obstructed by trees, clouds or other buildings. At this time, the generation of the whole string will be influenced by the shade. With the connection of optimizers on each solar panels, the power loss caused by shade, module aging or dismatching can be reclaimed as much as possible. At the same time, rapid shutdown and module-level monitoring is possible to be realized.
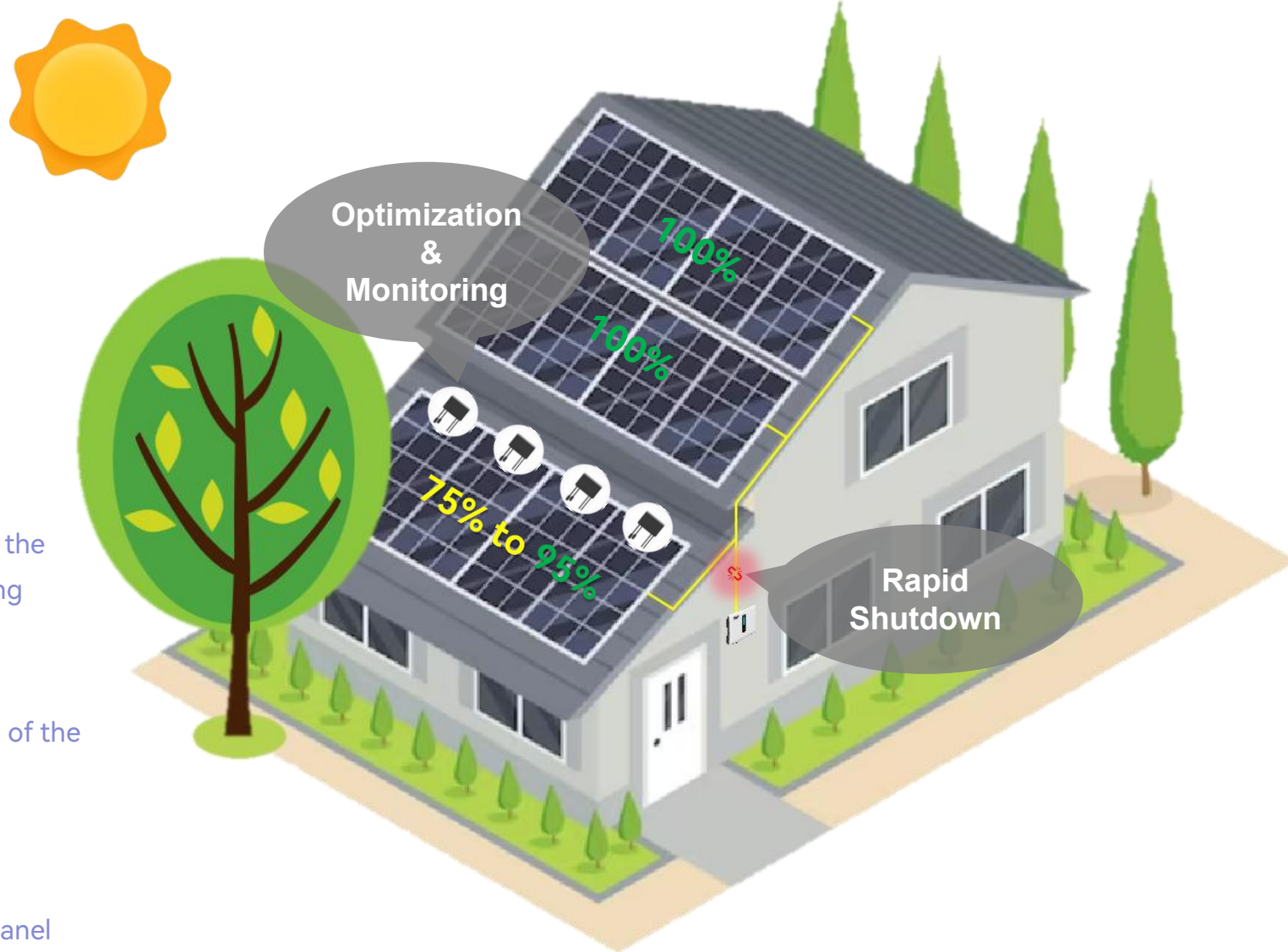
Module-level Power Optimization

Track the max power point of each solar panel, reclaim the power lost by shade, mismatching, and solar panel aging

Rapid Shutdown

Cut off each solar panel output and reduce the voltage of the entire string of solar panels to below 30V within 30S

Module-level Monitoring

Monitor the power, voltage and current of each solar panel

Optimization & Monitoring

100%

100%

75% to 95%

Rapid Shutdown

Solution

Optimization and Shutdown

	Tigo		
Function	TS4-A-O	TS4-A-S	TS4-A-M
Monitoring	●	●	●
Shutdown	●	●	
Optimization	●		

Besides optimizing the power, the optimization can collect the parameters of the panel and send it to the TAP, then TAP will send it to the CCA, and CCA will send these message to the serve at last. Once the optimization can not receive the signal from the CCA by cutting off the power of CCA, it will cut off the output of each connected solar panel.

Junction Box 5

4 **Optimization**

2 **CCA**

Power

3 **TAP**
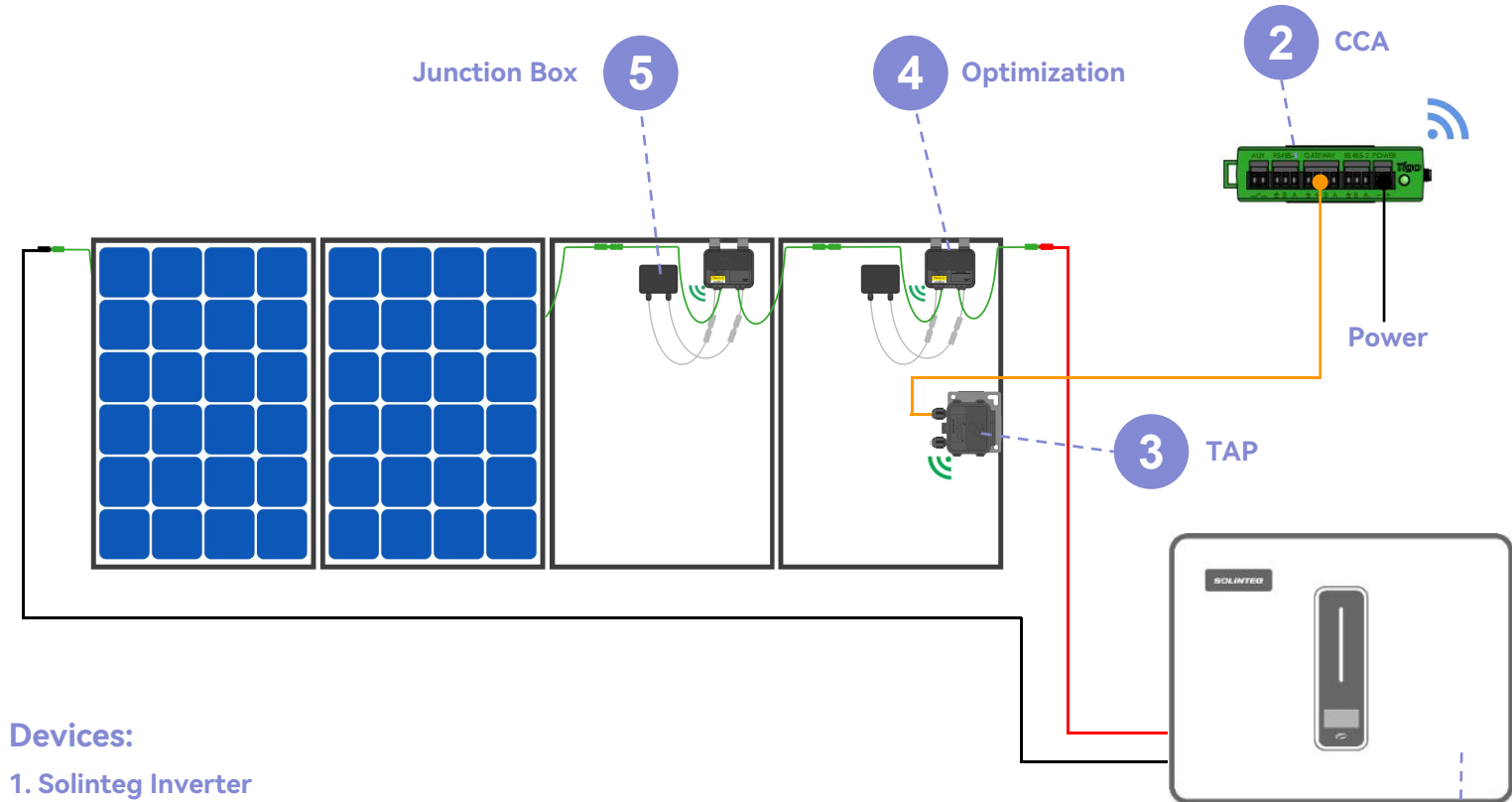
Devices:

1. Solinteg Inverter

2. Tigo Cloud Connect Advanced (CCA): process signals and communicate with the server

3. Tigo Access Point (TAP): communicate with CCA and optimization

4. Tigo Optimization: PV power optimization and shutdown control
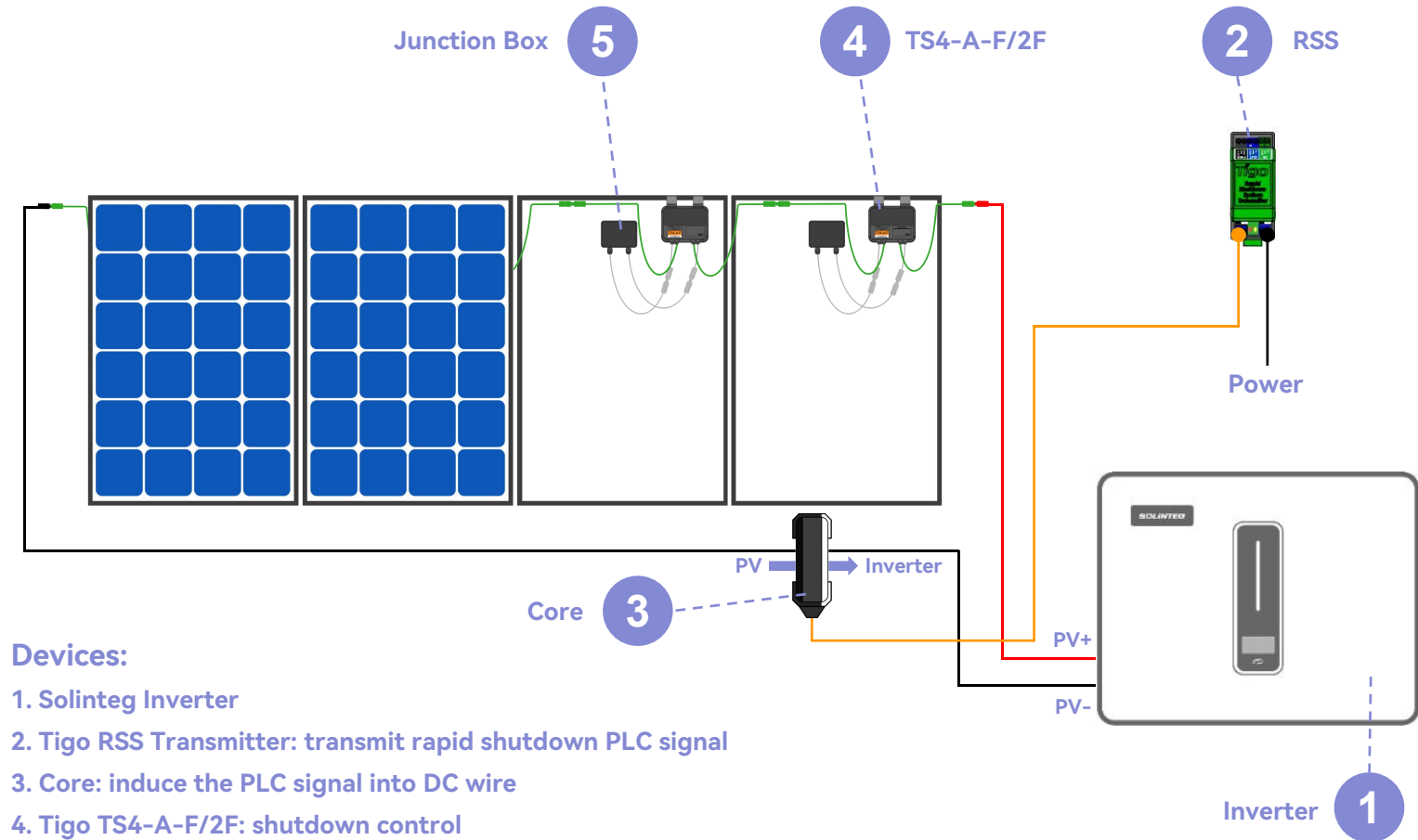
5. PV Junction Box

Note: Support up to 7 TAPs for a CCA, and up to 300 optimizations for a TAP.

Inverter 1

Solution

Rapid Shutdown Only

Tigo		
Function	TS4-A-F	TS4-A-2F
Shutdown	●	●

Each shutdown module (TS4-A-F) is connected with a panel (2F with two), and it can receive the PLC signal from RSS. The PLC signal form RSS is induced into the DC wire by the core and send it to the shutdown module. Once the power of the RSS is cut off and then the shutdown module can not receive the PLC signal, the output of each TS4 will be cut off.

Junction Box **5**   **4** **TS4-A-F/2F**   **2** **RSS**

Power

PV ➡ **Inverter**

Core **3**

PV+

PV-

Inverter **1**

Devices:

1. Solinteg Inverter
2. Tigo RSS Transmitter: transmit rapid shutdown PLC signal
3. Core: induce the PLC signal into DC wire
4. Tigo TS4-A-F/2F: shutdown control
5. PV Junction Box

Note: Up to ten negative conductors can pass through a transmitter core.

COMPATIBILITY

Solinteg & Tigo

Now we have finished the compatibility test of MHT 4-12K series and 10-20K series Solinteg inverter with Tigo TS4-A whole series (TS4-A-O/S/M/F/2F) products. The test of MHT 25-50K and MHS 3-8K series will be finished at Q4 of 2023.

For module level monitor parameters, it can only be viewed at Tigo EI platform. It is possible to see all the parameters on one monitor platform, Solinteg Cloud or Tigo EI, in the future, to provide a more convenient use for customers. So, just keep following with us.

Series	Model	Integration*	Firmware
MHT	4-12K	●	All
	10-20K	●	All
	25-50K	○	○
MHS	3-8K	○	○
Others	Will be integrated according to market demands		

*: Integration between Solinteg inverter and Tigo TS4-A whole series.

●: Compatibility test completed.   ○: Under testing now, to be finished in Q4 of 2023.

CASE STUDY

Optimization

During the use of the solar system, it is common that there is shade of clouds, trees or buildings. Just like the picture shown on the right, there are some shades caused by the chimney and roof. And there are four directions of these solar panels. These shades and different directions will cause mismatch on each string, and then the output of the whole string will be influenced.

In a test from January to May on a 10kw system as shown on the left chart, the generation is influenced greatly without the power optimizer. After the installation of the optimization, at least 20% of the power loss that caused by the mismatching of different directions and shades was reclaimed.

CASE STUDY

Rapid Shutdown

What is rapid shutdown?

Rapid shutdown is an electrical safety requirement set for solar panel systems by the National Electrical Code (NEC). Simply put, it provides a way to quickly de-energize a rooftop solar panel system. The National Fire Protection Association (NFPA) wrote rapid shutdown requirements into the NEC in an effort to keep first responders safe. Once your roof catches fire, firefighters can use rapid shutdown solutions to de-energize your solar panel system just in case they need to go up on your roof. And now, more and more areas have different form of rapid shutdown requirement.

With Tigo TS4-A-F/2F series, you can reduce the voltage of per TS4 to $0.6V_{DC}$ and string voltage to less than $30V_{DC}$ within 30 seconds.

CASE STUDY

Module-level Monitoring

Now many inverter companies have the solar system monitoring platform, but most of them can only monitor the status of each string, and cannot be more detailed to each module.

With Tigo TS4, you can monitor more detail status of each module, including power, current, voltage and so on. And you can see all the parameters after configuration at https://ei.tigoenergy.com/.
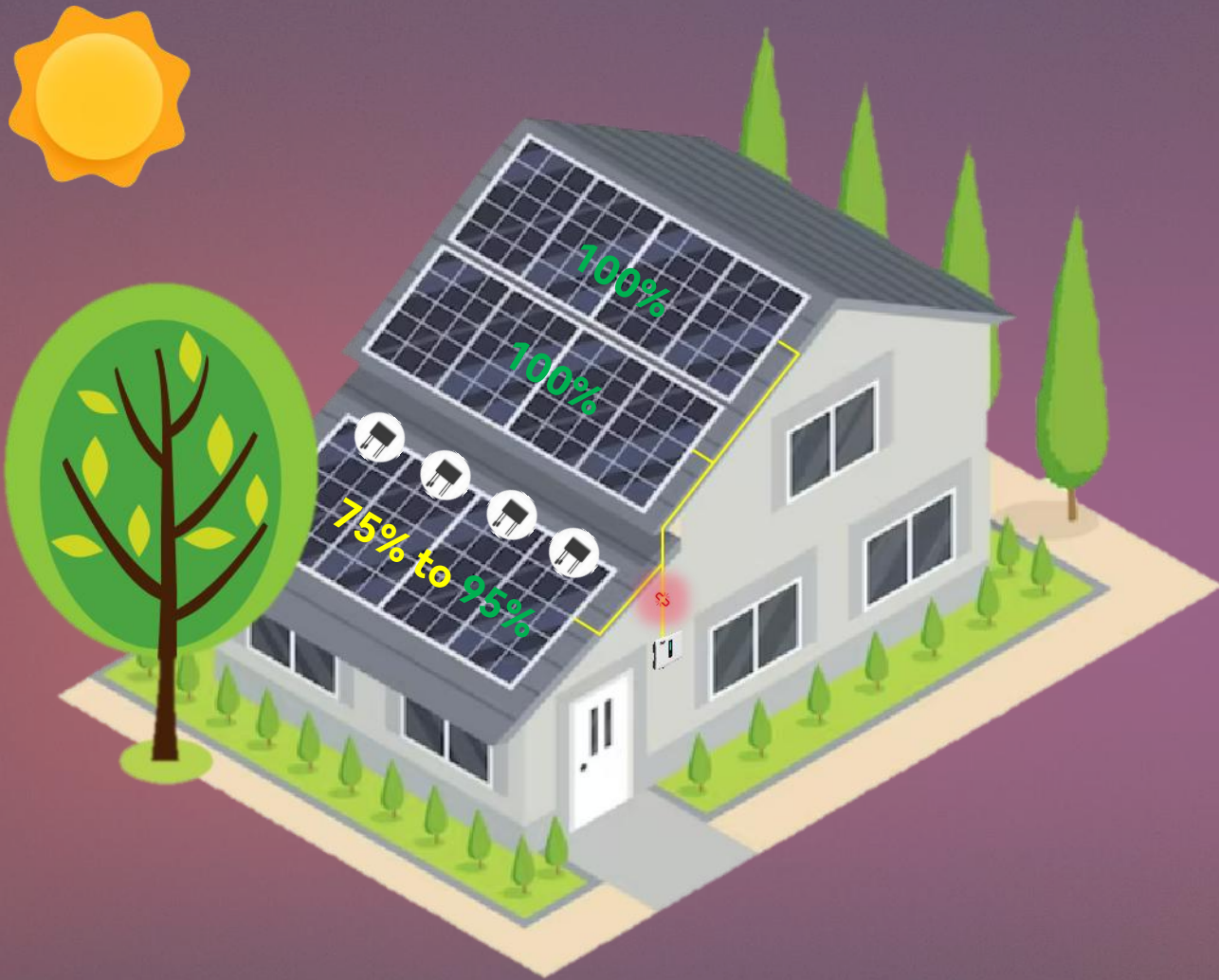
END
Visit Solinteg website to find out more

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