

# OPTIMIZATION REDEFINED



Don't just  
optimize a module.  
—  
Optimize your  
bottom line.



SMA Power+ Solution

# TRUE OPTIMIZATION

Module-level power electronics provide many benefits, and have proven popular with installers, but drawbacks remain and integrators have been asking for a better solution. Today, SMA has the answer.

We understand every integrator has a unique business model and each project has distinctive challenges. That's why our solutions enable residential installers to improve performance as well as business economics. See how SMA has redefined optimization by increasing flexibility and production while reducing costs.



## Optimized for Speed, Value

For integrators concerned with installation velocity, no residential inverter is faster to install or provides greater ROI than the newest Sunny Boy. Featuring 50 percent fewer connections than competing devices, the Sunny Boy can be unpacked, installed, and commissioned in a matter of minutes, and with unique upsell opportunities like Secure Power Supply, no other inverter without module level technology offers a more robust feature set.

- » Fewest system components, fastest installation, and wireless communication
- » Most cost-effective NEC 2014 compliance when paired with the SMA Rapid Shutdown System
- » Secure Power Supply, which now provides up to 2,000 watts of opportunity power in the event of a daytime grid outage
- » OptiTrac™ Global Peak maximum power point tracking for cost-effective shade mitigation for light-to-moderate shading



## Optimized for Flexibility

When project requirements necessitate a more nuanced approach, SMA offers a simple, yet powerful, solution. Selective Deployment is a unique concept that enables installers to use just the right amount of module-level power electronics (MLPEs) to meet the challenges of a particular project. Solar professionals can improve performance while still saving time and money and reducing service risk by installing fewer overall system components.

- » More cost effective than full deployment
- » Performance gains related to a specific need, like shading
- » Reduced service risk with improved performance
- » Fastest installation of any MLPE solution



## Optimized for Ultimate Performance

Sometimes business needs or project requirements dictate MLPE usage on every module. With the Power+ Solution, no module level solution provides greater performance with less effort. Whether it's addressing unique roofing orientations, variable shading situations, or needing module level monitoring or shutdown, full deployment of module level technologies can provide exceptional performance.

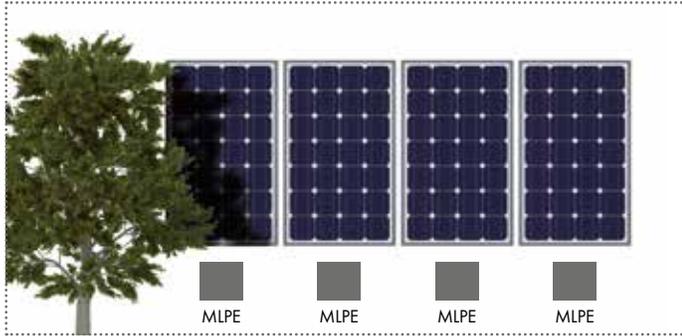
- » Most detailed monitoring granularity
- » NEC 2017 compliance ahead of schedule
- » Greatest redundancy and insurance against power loss
- » Operational simplicity



# SELECTIVE DEPLOYMENT: HOW DOES IT WORK?

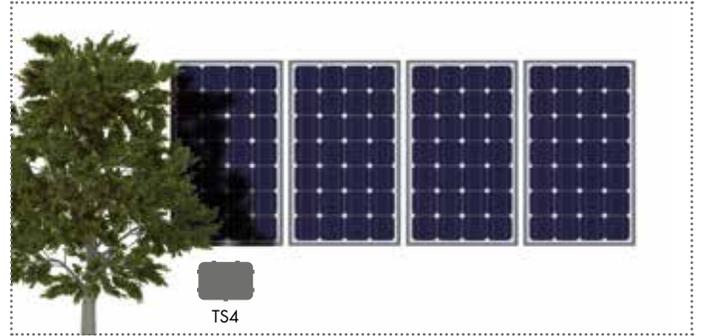
## Traditional "Optimization"

Module-level power electronics are often deployed to address specific challenges – like moderate to heavy shading. Traditional "optimization" requires MLPEs on every module, regardless of actual need. While production gains can be achieved, this model results in additional installation time, component cost, and service risk.



## Selective Deployment

Selective Deployment improves on these technical limitations by allowing for the application of specific electronics that improve performance without waste.



### Advantages

- » Additional energy gains
- » Granular monitoring
- » Simplified design process
- » Increased flexibility

### Disadvantages

- » Higher cost
- » Increased service risk
- » More components to install

### Advantages Retained

- » Additional energy gains
- » Simplified design process
- » Increased flexibility

### Advantages Gained

- » More cost-effective design
- » Streamlined logistics
- » Faster installation
- » Reduced service risk

# KEY BENEFITS

The Power+ Solution optimizes each step in the project process, resulting in superior returns. Powerful features that improve performance and reduce cost mean integrators can provide greater value to their customers while improving their own profitability.

## Simple, Flexible Design

The Power+ Solution provides numerous advantages over competing brands and enables system designers to operate more efficiently, reducing soft costs.

- » Selective Deployment eliminates waste of designing with unnecessary components
- » Up to three inverter-based MPPTs and TS4 flexibility solve complex rooftops more cost-effectively than alternatives
- » Compliance options for 2014 and 2017 NEC

## Improved Logistics

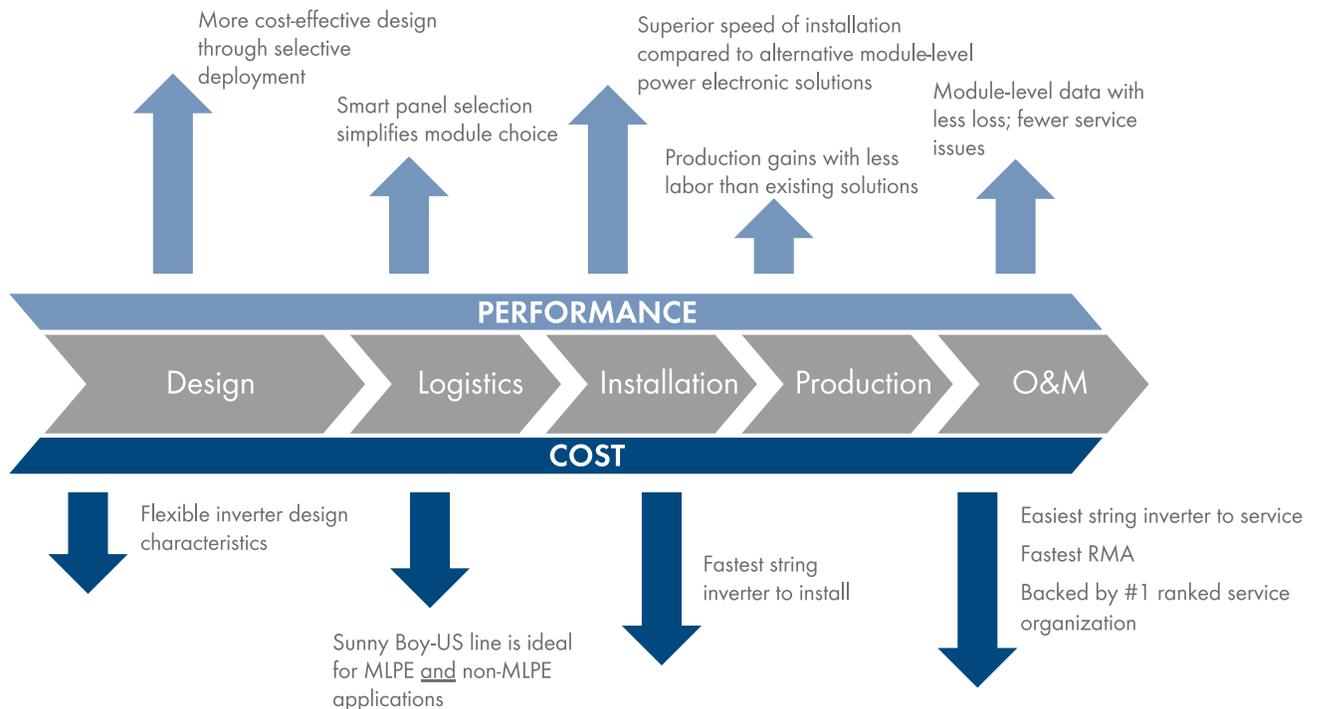
Distributors and integrators can significantly improve working capital by reducing stocking requirements with the Power+ Solution.

- » Module integrated TS4 interchangeable MLPE platform available from major suppliers
- » Retrofit option converts standard modules into smart panels
- » One inverter platform for MLPE and non-MLPE systems—no need for redundant lines
- » Integrated inverter DC disconnect simplifies stocking and allows for a single inverter part number
- » Fewer components to serve the MLPE and total markets, reducing overall stocking needs

## Faster Installation

With SMA, integrators can achieve more installations per day.

- » 50% faster inverter installation over leading brands
- » Tool-free TS4 saves 75 - 90 minutes\* per system compared to other MLPEs
- » Selective deployment reduces labor—up to 72 minutes per system\*\*
- » TS4 reduces risks associated with roof work
- » Retrofit installations occurs on the ground
- » Module integrated is installed at factory
- » MLPE incumbents restricted to rack mounting, incurring greater time spent on roof





### Greater Production

Attain greater lifetime energy harvest with less hardware and labor.

- » Selective deployment reduces potential points of failure, increases system-level MTBF
- » Distributed boost function removed from the module, eliminating failure points found in competing solutions
- » Communication not required for energy production, speeding commissioning
- » Protective TS4 housing distributes junction box heat away from module backing, improving lifetime energy harvest
- » TS4 is active only when needed; highest efficiency when active

### Simplified Service

Integrators experience reduced O&M and improved profitability with SMA.

- » Selective deployment reduces fleet-wide failure risk
- » TS4 platform expedites module and optimizer repair
- » Cover replacement completed in seconds – no cabling work
- » Two-part inverter enclosure separates the connection unit from the power unit, allowing for simple servicing
- » Support from the #1 Service team in the PV industry, as recognized by IMS research, with experience servicing an installed base of nearly 50 GW

\* Calculated based on 30 module system  
 » 3:00 minutes installed time per typical MLPE  
 » 0:30 seconds per TS4-R  
 » 0:00 added time for module-integrated TS4

\*\* Assuming selective deployment of 20% of modules



Up to  
**90 minutes saved per install**  
compared to other MLPE solutions

# COMPREHENSIVE SOLUTIONS

## Sunny Boy Portfolio

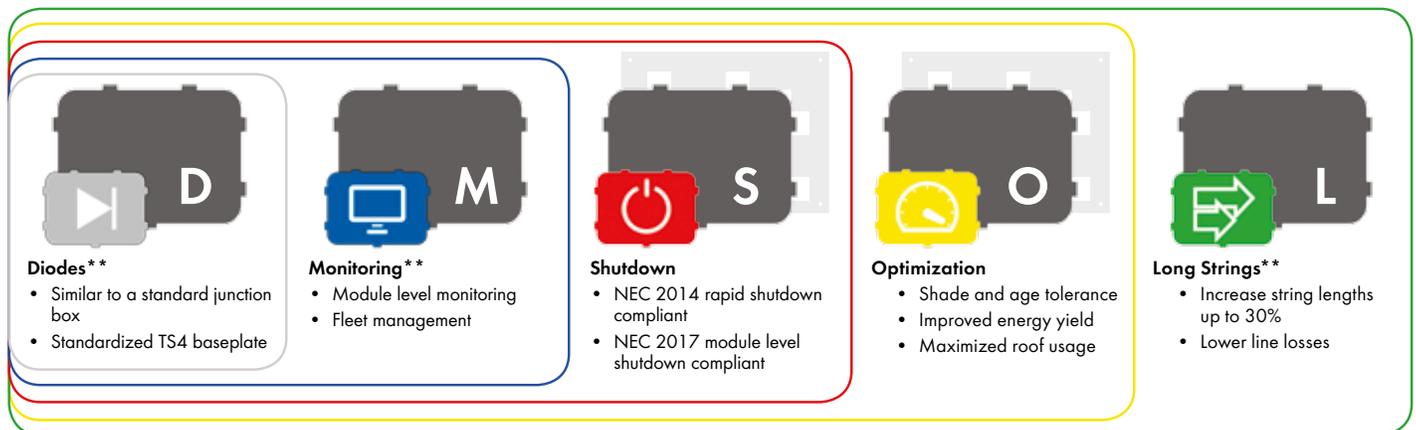
The Sunny Boy-US family consists of six power classes ranging from 3.0 to 7.7 kW. No inverter series offers the value, flexibility, and performance of the Sunny Boy.



- » 2011, 2014, and 2017 NEC-compliant configurations
- » Robust communication via Sunny Portal and Webconnect
- » World-class support with SMA Service and Sunny Design

## TS4 Modular Platform with Progressive Functionality

The TS4 modular platform is a unique plug-and-play concept that enables customized functionality with a simple exchange of a cover featuring integrated power electronics. Functionality increases from Diodes to Long Strings, with each cover including new benefits in addition to the functionality of the preceding cover. The TS4 is available in module integrated versions from leading suppliers and retrofit models available exclusively from SMA.



\*\*Diodes, Monitoring, and Long Strings covers available in module-integrated version.

# CHALLENGE CONVENTION

Today's residential market is highly competitive. With SMA, installers can gain an edge from a product portfolio that does more. The Sunny Boy series, TS4 modular DC technology platform, and related peripherals enable an installer to choose the ideal solution for a project's unique needs.

**Don't just optimize a module. Optimize your bottom line.**

ENERGY  
THAT  
CHANGES



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[www.SMA-America.com/Newsroom](http://www.SMA-America.com/Newsroom)

