



Always Available for Highest Yields

**FusionSolar Smart PV Solutions**

HUAWEI TECHNOLOGIES CO., LTD.



# Always Available for Highest Yields



## 20,000 green base site

Neimenggu, China  
Huawei has deployed nearly 20,000 green base site powered by wind and solar energy, realized 80% reduction in fuel consumption, to make a cleaner grass and sky.

## North latitude 78°13'test

June 2011, Svalbard, Norway  
After the test of -50°C in the Arctic, Huawei launched the northernmost LTE site for customers, 100M wireless Internet service to benefit local residents.



## 2900m subsea connection

April 12, 2010, Suriname, Guyana, Caribbean seafloor  
In Deep seabed 2,900 meters, laying 1,127 km of submarine cable systems, help local network bandwidth upgrade 3000 times.

## 6500m commitment

November 2007, China Everest  
For the 6500 meters commitment, Huawei deployed the world's highest altitude wireless base stations to achieve the Everest ascent route mobile signal coverage.



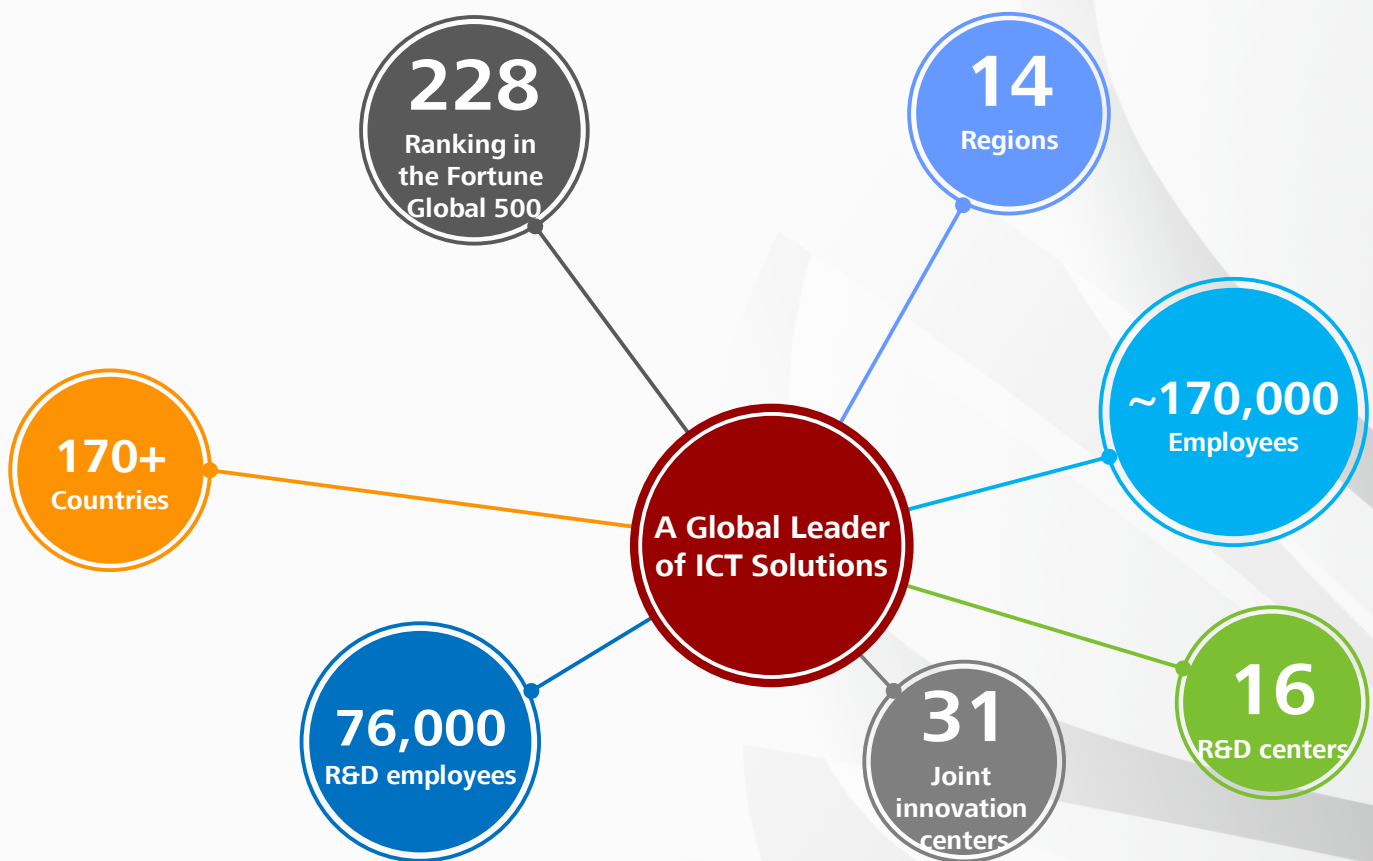
## 25 years maximum yields

Huawei dedicates to "Customer-centric", combines digital information technology and power electronics technology, has released "Smart, Efficient, Safe, Reliable" string inverter, helps customers achieve 25 years maximum yields.

# About Huawei

Huawei is a global leader of ICT solutions. Continuously innovating based on customer needs, we are committed to enhancing customer experiences and creating maximum value. With annual sales revenue of USD46.5 billion in 2014, Huawei ranked 228<sup>th</sup> on the Global Fortune 500.

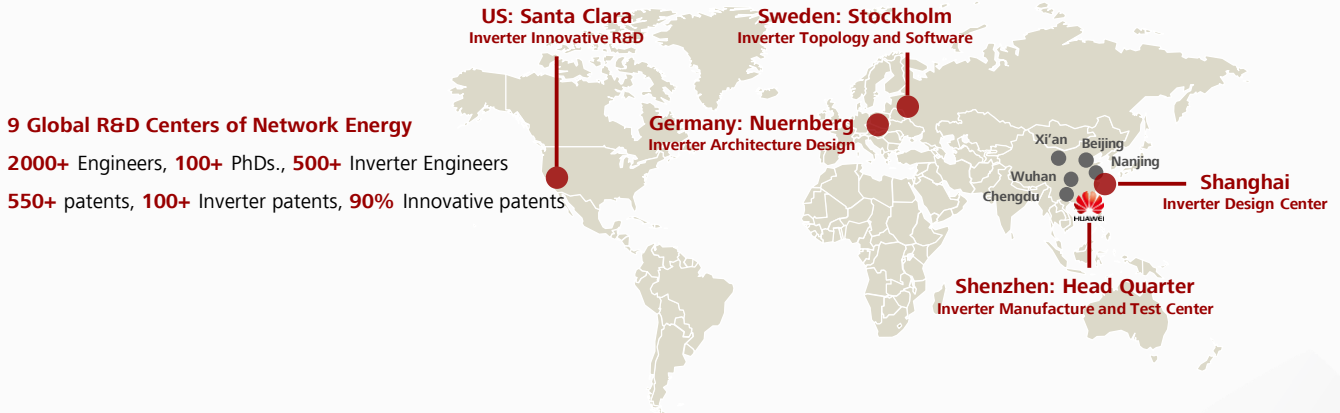
- As of December 31, 2014, Huawei has about 170,000 employees. Of the headcount, 45% or about 76,000 employees are specialized in R&D; 75% of the employees working overseas are local recruits.
- Huawei has 14 Regional Headquarters, 16 R&D centers and 45 training centers globally. Products and solutions are deployed in over 170 countries and regions worldwide.
- Huawei USA Inc. was founded in 2001 and has 10 branch offices, 7 R&D Centers and TAC center with 700 employees.
- Huawei Smart PV ordered 5.5GW from China, Euro, and Asia in 2014, and shipped 4GW.



# Always Available for Highest Yields



## Global R&D Centers



9 Global R&D Centers of Network Energy

2000+ Engineers, 100+ PhDs., 500+ Inverter Engineers

550+ patents, 100+ Inverter patents, 90% Innovative patents

## Global Application



The Huawei Smart PV Solution is widely deployed on the globe

4GW shipment, 5.5GW order, In 2014

## Global Service



Where there are our products, there are our services

170+ Countries and regions

129+ Spare parts center

300+ Global warehouse

22,000+ Service staff



# String Inverter (SUN2000-25KTL-US)



## Smart

- 6 strings intelligent monitoring and 80% time saving for fault detection
- Real-time operation monitoring
- Adaptive Edge MPPT for fast tracking

## Efficient

- Max. efficiency 98.6%, CEC efficiency 98.0%
- Saving AC cable investment up to 20% without N-Line

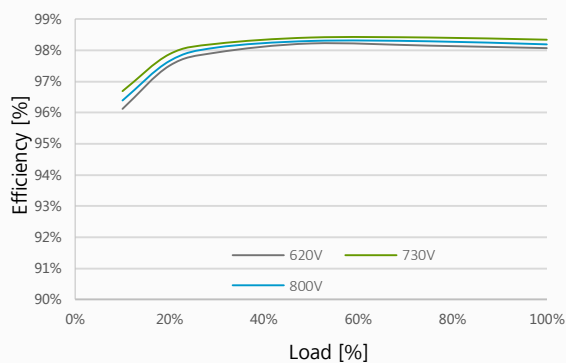
## Safe

- DC AFCI compliant to UL 1699B
- DC disconnect Integrated, safe and convenient for maintenance
- Ground fault protection
- Category C surge arresters for both DC and AC

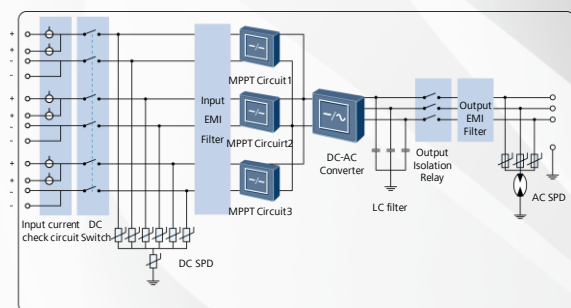
## Reliable

- No need for external fans with natural cooling technology
- Outdoor application of NEMA 4X

### Efficiency Curve



### Circuit Diagram



SUN2000-25KTL-US



# String Inverter (SUN2000-25KTL-US)



Technical Specifications	SUN2000-25KTL-US
	<b>Efficiency</b>
Max. Efficiency	98.6%
CEC Efficiency	98.0%
	<b>Input</b>
Max. DC Voltage	1,000 V
Max. Current per MPPT	25A
Min. Operating Voltage	200 V
Full Power MPPT Voltage Range	560 V~850 V
MPPT Operating Voltage Range	200 V~950 V
Rated Input Voltage	730 V
Max. Number of Inputs	6
Number of MPP Trackers	3
	<b>Output</b>
Rated AC Power	25,000 W
Max. AC Apparent Power	27,500 VA
Max. AC Active Power (cosφ=1)	25,000 W
Rated Output Voltage	277V/480V, 3W+PE/3W+N+PE
Rated AC Grid Frequency	60 Hz
Max. Output Current	33 A
Adjustable Power Factor	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	<b>Protection</b>
DC AFCI Compliant to UL 1699B	Yes
Input-side Disconnection Device	Yes
Anti-Islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Overcurrent Protection	Fuseless
DC Reverse-Polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Category C
AC Surge Arrester	Category C
Insulation Monitoring	Yes
Residual Current Detection	Yes
	<b>Communication</b>
RS485	Yes
USB	Yes
	<b>General</b>
Dimensions ( W×H×D )	550×770×270 mm (21.7×30.3×10.6 inch)
Weight	55 kg (121 lb)
Operation Temperature Range	-25 °C ~ 60 °C (-13°F - 140°F)
Cooling	Natural Convection
Operating Altitude	4,000 m (13,123 ft)
Relative Humidity	0~100%
DC Connector	Amphenol H4
AC Connector	Waterproof PG Terminal + OT Connector
Protection Rating	NEMA 4X
Internal Consumption at Night	< 1 W
Topology	Transformerless
Noise Emission (Typical)	<33 dB
	<b>Standards Compliance</b>
Safety/EMC	UL 1741, UL 1699B, UL 1998, IEEE 1547, CSA C22.2 #107.1-01, FCC Part 15
Grid Code	IEEE 1547, IEEE 1547.1



# String Inverter (SUN2000-30KTL-US)



## Smart

- 6 strings intelligent monitoring and 80% time saving for fault detection
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- Adaptive Edge MPPT for fast tracking

## Efficient

- Max. efficiency 98.6%, CEC efficiency 98.0%
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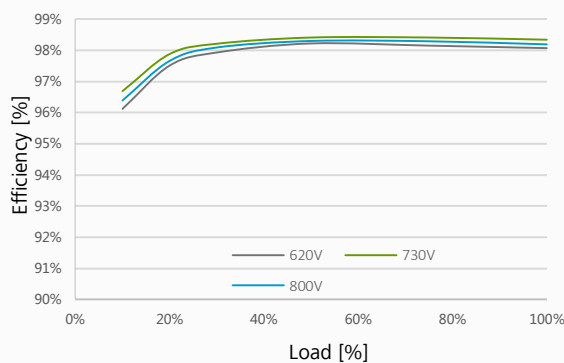
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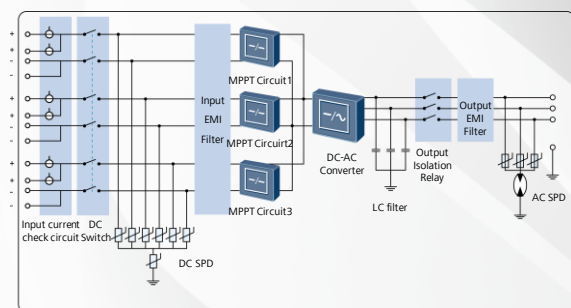
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SUN2000-30KTL-US



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## Smart

- MODBUS-TCP for connections to Huawei NetEco
- IEC60870-5-104 for connections to third-party monitoring systems
- USB and embedded web for data reading and software upgrade
- Automatically detecting equipment and assigning RS485 addresses
- Remote control of active & reactive power

## Simple

- Up to 80 inverters feeding into one Smart Logger
- Up to 30 devices per RS485 bus
- Easy to install on walls, tabletops and rails mounting

## Stable

- Max. reliable communication range of 1000m
- Remote configuration, automatic set-up of RS485 addresses

Technical Specifications	Smart Logger
	<b>Device Management</b>
Max. Number of Devices	80
Communication Interface	3 x RS485
Max. Communication Range	1000 m
	<b>Display</b>
LCD	3.5 inch graphic LCD
LED	3 LEDs
Web	Embedded Web
	<b>General Data</b>
Power Supply	100 V - 240 VAC, 50 Hz / 60 Hz
Power Consumption	Typical: 3 W, Maximum: 7 W
Memory	32 MB flash memory, expanded to 16 GB with optional SD card
Language	English, Chinese, German, Italian, Japanese, French
Dimensions (W/H/D)	225 × 140 × 50 mm (8.9 × 5.5 × 2.0 in.)
Operating Temperature Range	-20 °C to +60 °C (-4 °F to +140 °F)
Relative Humidity (Non-condensing)	5 - 95%
Degree of Protection	IP20
Installation Option	Wall mounting, Tabletop, Rail mounting
Safety / EMC	UL 60950-1, CSA-C22.2 No. 60950-1-07, FCC CFR47 Part15 Subpart B:2013, ICES-003 Issue 5:2012
	<b>Interface</b>
Ethernet	10 / 100 M, Modbus – TCP, IEC60870-5-104
RS485	Modbus - RTU
USB	Yes
Number of Digital Inputs	4
Number of Analog Inputs	2
Number of Relays	3



## Smart

- Easy data accesses on mobile devices
- Proactive reports of yields and alarms

## Simple

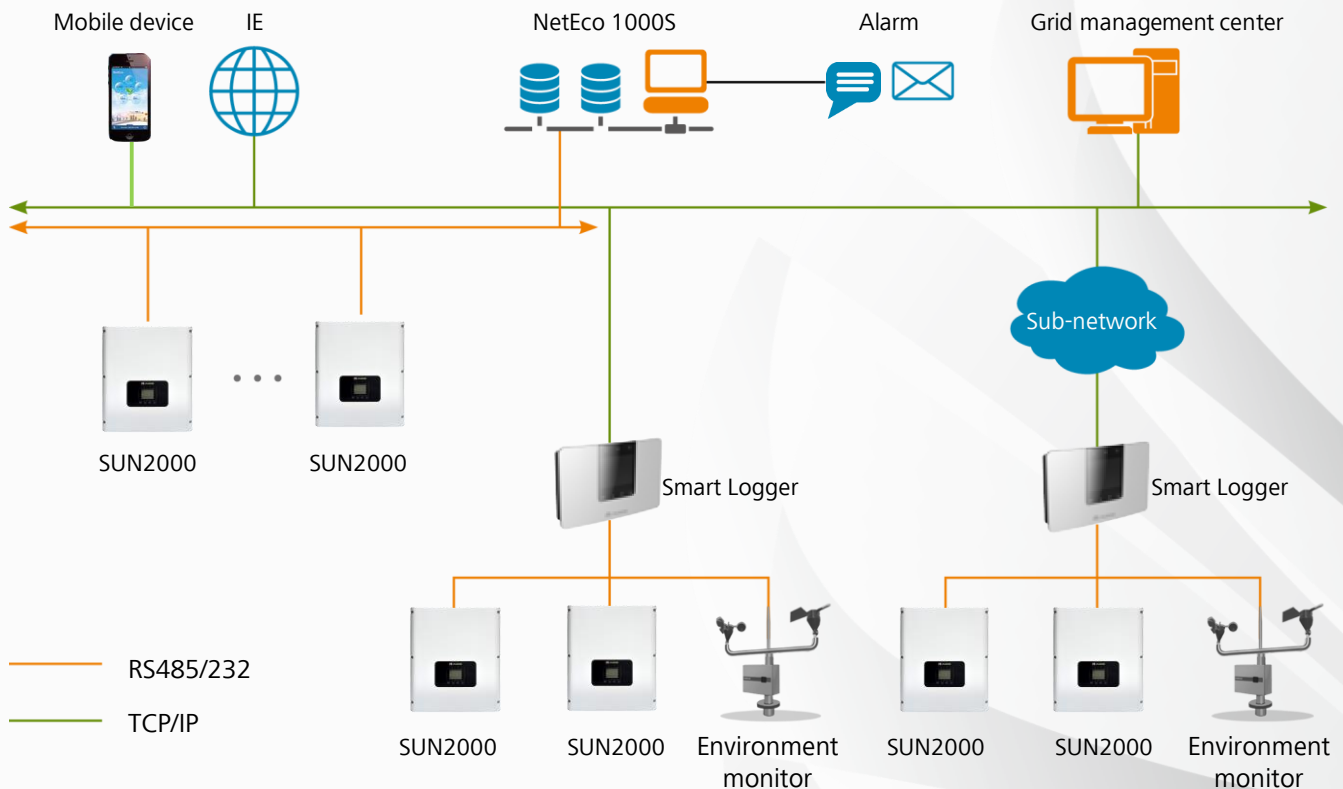
- One-click installation on PC
- Fault alarms via SMS and E-mail

## Stable

- Hierarchical management
- Up to 25 years data storage with CSV files



## Network Structure



# Smart PV Plant References

World's Largest Smart PV Plant, 130MW, Golmud, Qinghai, China



Qianhua Smart PV Plant, 100MW, Tuoketuo, Inner Mongolia, China



Tonking Smart PV Plant, 30MW, Quzhou, Zhejiang, China



# Smart PV Plant References

Songshan Lake Smart PV Plant, 17MW, Dongguan, Guangdong, China



8.1MW Ground-mounted PV Plant, Cardigan, Ceredigion, UK



7.8MW Ground-mounted PV Plant, Reden, Saarbrücken, Germany





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