

Smart Dongle-4G

Product Description

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1 Function Description

1.1 Function

SmartDongle-4G works with Huawei smart PV inverters to transmit inverter data to backstage. It uses 4G/3G/2G wireless communication as northbound transmission channel through integrated LTE communication module. Besides, inverters can also receive instructions from backstage servers through 4G/3G/2G wireless communication.

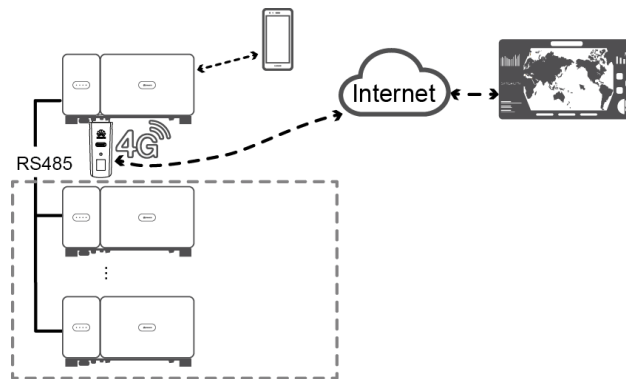


Figure 1. 4G dongle Typical Working Scenario



Figure 2. 4G dongle Product Picture

1.2 Principle

SmartDongle-4G integrates MCU, 5V-3.3V power source, 4G module with mini-PCle interface, SIM card slot and 4G antenna. Dongle is powered through USB interface, and can communicate with control board inside inverter through USB interface.

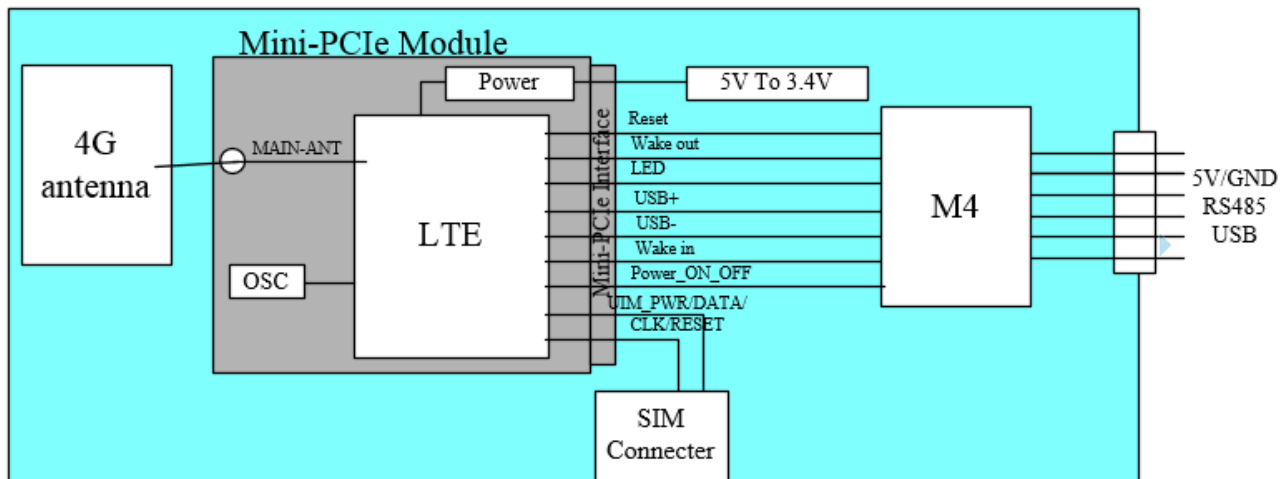


Figure 3. 4G dongle Circuit Diagram

1.3 Product Model

For different target markets, Smart Dongle-4G have corresponding models

Target market	China	Europe, India, etc.	SEA,	Australia, Taiwan	Japan	Korea
Model	SDongleA-03-CN	SDongleA-03-EU		SDongleA-03-AU	SDongleA-03-JP	SDongleA-03-KR

2 Technical Requirement

2.1 Basic parameters

Parameters	Description
Power Source	DC 5V, 1A
Power Consumption (typical)	3.5W
Protection Degree	IP65
Storage Humidity Range	5% RH~95% RH
Operation Temperature Range	-30°C~+65°C
Storage Temperature Range	-40°C~+70°C
Sim Card Type	Standard MiniSIM, 25mm*15mm
Dimensions (W x H x D)	130mm×48mm×33mm
Installation Method	Plug and play with SUN2000 inverters
Connection interface	Non-standard USB3.0 interface (USB2.0 Protocol, RS485 Protocol)
Inverters Supported	SUN2000-50KTL/60KTL-M0, SUN2000-3/4/5/6/8/10KTL-M0 more available upon request

2.2 Antenna Parameter

Parameter	Description	
Frequency Range (MHz)	1710MHz-2690MHz	791MHz-960MHz

Antenna Gain (dBi)	≥1dBi 791~960MHz ≥0dBi 1710~2170MHz ≥1dBi 2170~2690MHz
Frequency (MHz)	≥40% 791~960MHz ≥30% 1710~2170MHz ≥40% 2170~2690MHz
Polarization	Vertical

2.3 Tx&Rx Frequency of SDongleA-03-EU

Operating Band	Tx	Rx
UMTS Band 1	1920 MHz–1980 MHz	2110 MHz–2170 MHz
UMTS Band 2	1850 MHz–1910 MHz	1930 MHz–1990 MHz
UMTS Band 5	824 MHz–849 MHz	869 MHz–894 MHz
UMTS Band 8	880 MHz–915 MHz	925 MHz–960 MHz
GSM 850	824 MHz–849 MHz	869 MHz–894 MHz
GSM 900	880 MHz–915 MHz	925 MHz–960 MHz
GSM 1800	1710 MHz–1785 MHz	1805 MHz–1880 MHz
GSM 1900	1850 MHz–1910 MHz	1930 MHz–1990 MHz
LTE Band 1	1920 MHz–1980 MHz	2110 MHz–2170 MHz
LTE Band 2	1850 MHz–1910 MHz	1930 MHz–1990 MHz
LTE Band 3	1710 MHz–1785 MHz	1805 MHz–1880 MHz
LTE Band 4	1710 MHz–1755 MHz	2110 MHz–2155 MHz
LTE Band 5	824 MHz–849 MHz	869 MHz–894 MHz
LTE Band 7	2500 MHz–2570 MHz	2620 MHz–2690 MHz
LTE Band 8	880 MHz–915 MHz	925 MHz–960 MHz
LTE Band 20	832 MHz–862 MHz	791 MHz–821 MHz

2.4 LED indicator Status

LED		Description
Color	Status	
-	Off	Not powered on.
Yellow	Steady on	Initializing.
Green	Blinking at long intervals (on for 0.5s and then off for 0.5s)	Dialing.

	Blinking at long intervals (on for 1s and then off for 1s)	The dialing is successful.
	Steady on	Connected to the management system.
	Blinking at short intervals (on for 0.2s and then off for 0.2s)	Communicating with the management system.
Red	Steady on	Internal fault.
	Blinking at short intervals (on for 0.2s and then off for 0.2s)	No SIM card is installed, or the SIM card is in poor contact.
	Blinking at long intervals (on for 1s and then off for 1s)	The Dongle fails to be connected to a management system because it has no signals, weak signal strength, or no traffic.
Blinking red and green alternatively	Blinking at long intervals (on for 1s and then off for 1s)	No communication with the inverter.

3 Communication Standard & Frequency

Model	Communication Frequency
SDongleA-03-CN	LTE FDD: B1, B3, B8 LTE TDD: B39, B40, B41 (38) DC-HSPA+/HSPA+/HSPA/UMTS: B1, B5, B8, B9 TD-SCDMA: B34, B39 GSM/GPRS/EDGE: 900MHz, 1800MHz
SDongleA-03-EU	LTE FDD: B1, B3, B7, B8, B20 WCDMA/HSDPA/HSUPA/HSPA+: B1, B8 GSM/GPRS/EDGE: 850MHz, 900MHz, 1800MHz, 1900MHz
SDongleA-03-AU	LTE FDD: B1, B2, B3, B4, B5, B7, B8, B28 LTE TDD: B40 WCDMA: B1, B2, B5, B8 GSM: 850MHz, 900MHz, 1800MHz, 1900MHz
SDongleA-03-JP (Docomo)	LTE FDD: B1, B3, B8, B18, B19, B26 LTE TDD: B41 WCDMA: B1, B6, B8, B19
SDongleA-03-KR (SKT)	LTE FDD: B1, B3, B5, B7 WCDMA: B1

4 Packaging, Storage & Transportation

4.1 Packaging Requirement

- The Smart Dongle-4G should be packaged in an individual package.
- Package dimension (W*H*D) : 145mm*50mm*47mm.
- Package weight: 0.09kg.

4.2 Storage Requirement

- The Smart Dongle-4G should be stored in a clean and dry place and be protected from dust and water vapor corrosion.
- Keep the storage temperature at -10°C to $+40^{\circ}\text{C}$ and the humidity at $<80\%$ RH.

4.3 Transportation Requirements

- The Smart Dongle-4G should be transported inside firm boxes as required. “Handle with care” “Keep dry” labels should be attached outside the box.
- Boxes with Smart Dongle-4G can be transported in any methods. During the transportation, rain, snow and mechanical crush should be avoided