SMA

System Monitoring

SUNNY WEBBOX with *Bluetooth*® Wireless Technology

Installation Guide

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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This manual contains important instructions for Sunny WebBox with *Bluetooth*® plant monitoring unit, that must be followed during installation and maintenance of the plant monitoring unit.

The Sunny WebBox with *Bluetooth*® is designed and tested according to international safety requirements, but as with all electrical and electronic equipment, certain precautions must be observed when installing and/or operating the Sunny WebBox with *Bluetooth*®. To reduce the risk of personal injury and to ensure the safe installation and operation of the Sunny WebBox with *Bluetooth*®, you must carefully read and follow all instructions, cautions and warnings in this installation guide.

Warnings in this document

A warning describes a hazard to equipment or personnel. It calls attention to a procedure or practice, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the SMA equipment and/or other equipment connected to the SMA equipment or personal injury.

⚠ **DANGER**
DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING**
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**
CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE
NOTICE is used to address practices not related to personal injury.

Other Symbols in this document

In addition to the safety and hazard symbols described on the previous pages, the following symbol is also used in this installation guide:

Information

This symbol accompanies notes that call attention to supplementary information that you must know and use to ensure optimal operation of the system.

General Warnings

⚠ **General Warnings**

All electrical installations must be done in accordance with the local and *National Electrical Code*® ANSI/NFPA 70. For installation in Canada the installations must be done in accordance with applicable Canadian standards.

The Sunny WebBox with *Bluetooth*® contains no user-serviceable parts except for the fans on the bottom of the enclosure and the filters behind the fans as well as the handle covers on the sides of the unit. For all repair and maintenance, always return the unit to an authorized SMA Service Center.

Before installing or using the Sunny WebBox with *Bluetooth*®, read all of the instructions, cautions, and warnings on the Sunny WebBox with *Bluetooth*® in this installation guide.

Wiring of the Sunny WebBox with *Bluetooth*® must be made by qualified personnel only.

Table of Contents

1   Notes on this Guide

This guide describes the installation and commissioning of the Sunny WebBox with *Bluetooth*. Keep this guide in a convenient place for future reference. This guide does not contain any detailed information about the connected devices. Detailed information about the devices connected is provided in the manuals for the devices.

1.1 Validity

This installation guide is valid for Sunny WebBox with *Bluetooth* from hardware version A1 and from firmware version 1.1.

1.2 Additional Information

Additional information about SMA *Bluetooth* Wireless Technology can be found in the download area at www.SMA-America.com.

Among other things, the download area contains the following information products:

- Certificates and approvals for the Sunny WebBox with *Bluetooth*.
- Information on setting up a local FTP server for automatic reception of plant data via the FTP push function of the Sunny WebBox in the Technical Information "Configuring a Local FTP Server".

Also read the user manual of the Sunny WebBox with *Bluetooth* which you can call up via the help button in the user interface [?] .

1.3 Syntax

In this document SMA America Production, LLC is referred to in the following as SMA.

In this document the Sunny WebBox with *Bluetooth* is referred to in the following as Sunny WebBox.

In this guide, the term photovoltaic plant is abbreviated to PV plant.

Formatting	Meaning
[Save]	Buttons are displayed in square brackets [ ].
"Menu1"	Menu items are displayed in quotation marks.
"Menu1 > Menu2"	Menu paths are given in quotation marks. The angle bracket > separates individual menus.
Example:	Examples are represented in italics.

2   Safety

2.1 Appropriate Usage

The Sunny WebBox is a data logger that records and logs the data of a PV plant. The Sunny WebBox makes the data available via the integrated web server and a user interface for download. Additionally, the Sunny WebBox can be used for remote diagnostics and the configuration of connected devices in a PV plant via the computer.

With the Sunny WebBox all data of the connected devices can be continually recorded and evaluated. During operation the Sunny WebBox records all values of the PV plant every 2 minutes. Values of currently opened parameter groups are updated by the Sunny WebBox every 20 seconds. If the connection between the Sunny WebBox and the PV plant is broken, the Sunny WebBox recreates the connection automatically, as soon as this is possible.

The Sunny WebBox is integrated into the *Bluetooth* plant as a network forming device (Master device). Network forming devices are principally communication products which form the structure of the *Bluetooth* PV plant, collect, evaluate and process data.

The number of devices which the Sunny WebBox can manage depends on the number of master devices in the *Bluetooth* network with the same NetID. If the Sunny WebBox is the only Master in the *Bluetooth* network, the Sunny WebBox can manage up to 50 devices. If 2 masters are present in the *Bluetooth* network (e.g. Sunny Explorer or Sunny Beam with *Bluetooth*), a maximum of 25 devices can be managed by the Sunny WebBox. A maximum of one Sunny WebBox is allowed in a *Bluetooth* network with the same NetID. Additional information about SMA *Bluetooth* Wireless Technology can be found in the download section at www.SMA-America.com.

The Sunny WebBox is only to be operated using the supplied plug-in power supply and in the voltage range intended for this.

Do not use the data from Sunny WebBox for billing purposes. Additional costs can occur through the use of the internet.

The Sunny WebBox is only to be used with original accessories or recommended accessories approved by SMA.

Only use the Sunny WebBox exclusively for the purposes described in the manual.

Carefully read the documentation belonging to the Sunny WebBox before you commission the Sunny WebBox.

Also refer to the technical data of the Sunny WebBox.

Standards

The Sunny WebBox complies with the following standards:

*   FCC Part 15 (see page 60).

2.1.1 Supported products

The Sunny WebBox supports the following SMA products:

- SMA inverters with integrated *Bluetooth:*
    - SB 2000HF–US/SB 2500HF–US/SB 3000HF–US
    - STP 10000TL–US/STP 12000TL–US/STP 15000TL–US/STP 17000TL–US
- SMA inverters with upgraded SMA *Bluetooth* Piggy-Back from software version 02.00.00.R. A list of the supported inverters can be found in the SMA *Bluetooth* Piggy-Back manual.
- Sunny Matrix from Firmware-Version 2.10.00
- SMA *Bluetooth* Repeater
- Sunny SensorBox with SMA Power Injector with *Bluetooth*

2.1.2 Target Group

This guide is for qualified personnel. A qualified electrically skilled person has received training and has demonstrated skills and knowledge in the construction and operation of the device. A qualified electrically skilled person is trained to deal with the dangers and hazards involved in installing electric devices.

2.2 Safety Precautions

Follow all operating and safety instructions in this guide. Failure to follow these instructions could result in damage to the device and cause personal injury. When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following

⚠ **WARNING**

Do not use the Sunny WebBox near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.

CAUTION

Only use the power supply unit included in delivery of the Sunny WebBox. Do not open the power supply.

NOTICE

Lay the cables in such a way that no one can stand on them or trip over them.

NOTICE

Safety-relevant parameters

You can change the safety-related inverter parameters of your PV plant using the Sunny WebBox. Incorrectly set parameters can cause connected inverters to deactivate. This results in yield losses. Usually, these safety-relevant parameters may only be changed upon consultation with the electric power company into whose grid you are feeding. In case of doubts, contact your electric power company.

NOTICE

Touching the components can result in electrostatic discharges. This can result in damage to or destruction of the device.

- Only qualified personnel may install the Sunny WebBox.
- Do not touch components' connections and plug contacts.
- Ground yourself before working on the device.

i	**Data deviations**
	The data collected by the Sunny WebBox may deviate from the data of the electricity meter. The Sunny WebBox data must not be used for billing purposes.

Keep this guide in a convenient place for future reference.

3 Unpacking

3.1 Scope of Delivery

Check the scope of delivery for completeness and for any external damage. Contact your dealer if you find any damage or if there are parts missing.
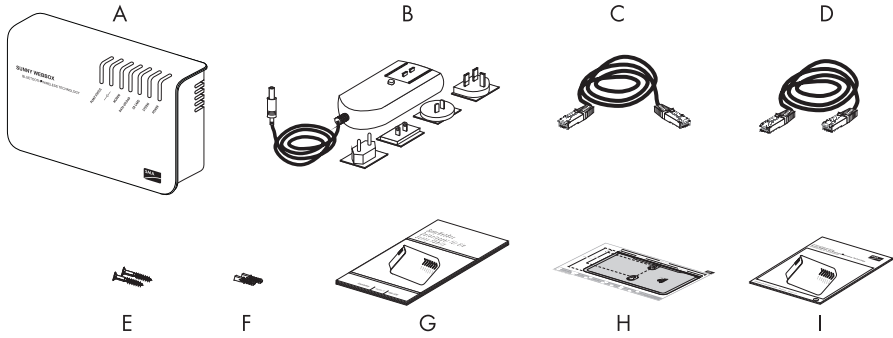
Position	Quantity	Description
A	1	Sunny WebBox
B	1	Plug-in power supply and socket adapter
C	1	Network Cable (red)
D	1	Network cable (blue)
E	2	Screws (M6)
F	2	Wall anchors (M6)
G	1	Installation Guide (You can activate the user manual of the Sunny WebBox directly via the user interface or download it at www.SMA-America.com.)
H	1	Drilling template
I	1	Quick guide for Sunny WebBox commissioning

3.2 Identifying the Sunny WebBox

Type label

You can identify the Sunny WebBox using the type label. The type label can be found on the back of the enclosure.

Firmware Version

The current firmware version can be found on the status bar in the user interface of the Sunny WebBox.
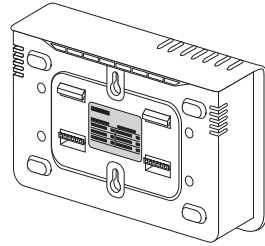
4   Device Overview

4.1 LED Overview
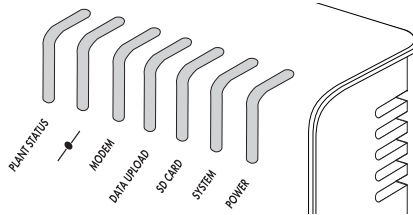
LED designation	State	Meaning
"PLANT STATUS"	Glows green	All devices in the PV plant have the status "OK".
	Glows orange	At least 1 device in the PV plant has the "Warning" status.
	Glows red	At least 1 device in the PV plant has the "Fault" status.
	off	There is no device available in the PV plant.
●—	Glows green	Default, everything is OK
	Glows orange	Login for at least 1 connected device is not OK.
	Glows red	Login for all connected device is not OK.
"MODEM"	off	Not used
"DATA UPLOAD"	Glows green	The data transmission to the Sunny Portal or an external FTP server is active. Last upload was successful.
	Flashes green	The Sunny WebBox is sending data to the Sunny Portal or an external FTP server.
	Glows red	The last data transmission to the Sunny Portal or an external FTP server was not successful.
	off	Data transmission is deactivated.

LED designation	State	Meaning
"SD CARD"	Glows green	The SD card is inserted, writeable and the free capacity is greater than 10 % of the overall capacity.
	Flashes green	The SD card is being written to. The free capacity is greater than 10 % of the overall capacity.
	Glows orange	The SD card is inserted, writeable and the free capacity is less than or equal to 10 % of the overall capacity.
	Flashes orange	The SD card is being written to. The free capacity is less than or equal to 10 % of the overall capacity.
	Flashes red	The SD card is full or write-protected.
	off	No SD card is inserted.
"SYSTEM"	Glows green	The Sunny WebBox is ready for operation.
	Flashes green	The Sunny WebBox is starting.
	Flashes orange	The Sunny WebBox is performing a firmware update.
	Flashes red	A system error has occurred.
"POWER"	Glows green	The Sunny WebBox is supplied with electricity.
	off	The Sunny WebBox is not supplied with electricity.

4.2 Connection Area Overview
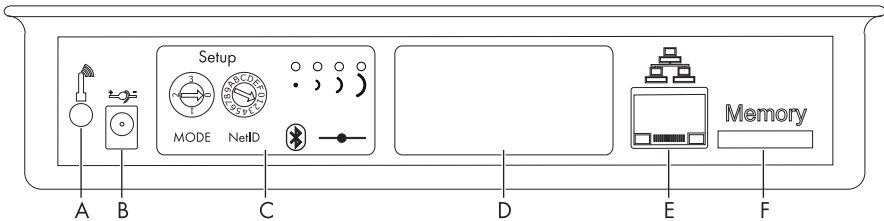
Position	Description
A	Connection for GSM antenna cable (not used)
B	Connection for the plug-in power supply
C	Module slot for the communication to the PV plant
D	Module slot (not used)
E	Network connection for 10 / 100 MBit Ethernet
F	SD card slot

4.3 *Bluetooth* Module Overview
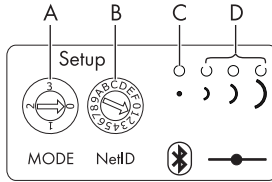
Position	Description
A	"MODE" rotary switch
B	"NetID" rotary switch
C	*Bluetooth* LED (blue)
D	Connection display (not used)

4.3.1 *Bluetooth* Module LED Overview

Status	Meaning
Bluetooth LED (blue)	
glows	*Bluetooth* is switched on.
off	*Bluetooth* is switched off.

4.4 Overview of the LEDs on the Network Connection
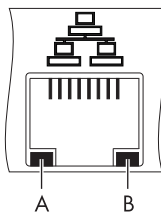
Position	LED	State	Meaning
A	Speed	On	100 MBit connection speed
		off	10 MBit connection speed
B	Link / Activity	On	Connection (link) established
		Flashing	The Sunny WebBox is currently transmitting or receiving data (activity).
		off	No connection established

5   Mounting the Device

5.1 Mounting and Installation Location Requirements

Note the following information on the mounting / installation location of the Sunny WebBox:

- The Sunny WebBox is only suitable for installation in enclosed spaces.

- The ambient temperature must be between –4 °F and 149 °F (–20 °C and +65 °C).

- Protect the Sunny WebBox from dust, wet conditions, corrosive substances and vapors.

- Observe the minimum clearances in order to guarantee sufficient heat dissipation.

Top	2 in. (5 cm)
Side	$^{13}/_{32}$ in. (1 cm)
Bottom	6.0 in. (15 cm)

- Do not cover the Sunny WebBox.

- The Sunny WebBox requires a 100 V...240 V power outlet.

- Check the mounting location for the presence of current-carrying cables. If there are current carrying cables at the mounting location, select a different mounting location.

- The distance from the Sunny WebBox to the inverters may not be greater than the maximum permitted distance of the corresponding plant communication type. Note the specifications in the respective sections.

- During installation, make sure there is optimal reception for the transmission paths.

- Certain ambient conditions can reduce the connection quality and data transmission speed between *Bluetooth* devices.

  - Mount or install the *Bluetooth* device at a distance of at least 3 $^{1}/_{4}$ ft. (1 m).

    - WLAN devices

    - Microwave ovens

    - Other devices that use the 2.4 GHz frequency band
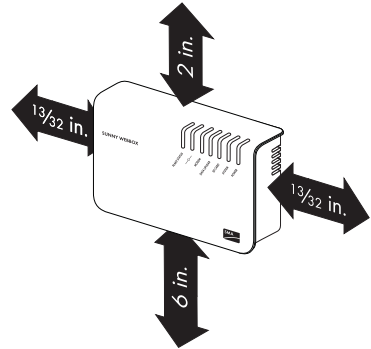
5.2 Determining the Mounting/Installation Location for *Bluetooth* PV Plants

5.2.1 Information on SMA *Bluetooth*

Devices of your PV plant can communicate with a communication device and can be connected to other inverters via *Bluetooth*. To ensure the devices communicate with each other and are connected together, they have to be set to the same NetID. The NetID is a unique identification number of your PV plant. Thus with the NetID your PV plant is able to be distinguished from other PV plants.

> **i** **Determining the NetID for your PV Plant**
>
> If your plant currently does not have a NetID, you must first determine a free NetID using the Sunny Explorer software or the Sunny Beam with *Bluetooth* and then set this in the devices of your PV plant.

> **i** **At the present time NetID 1 is not supported by the Sunny WebBox.**
>
> A direct connection to an individual SMA *Bluetooth* device via NetID 1 is currently only possible with the Sunny Explorer software or the Sunny Beam with *Bluetooth*.
>
> Change the NetID of the Sunny WebBox to the NetID of your PV plant (NetID 2 to NetID F).

5.2.2 Determining the Mounting / Installation Location

Before you mount the Sunny WebBox, determine the connection quality at the mounting / installation location of the Sunny WebBox to your PV plant. The connection quality can be checked using the Sunny Explorer or the Sunny Beam with *Bluetooth*. Refer to the user manual of the relevant device. You can change the connection quality by reducing and increasing the distance between the *Bluetooth* devices.

5.2.3 Extension of the *Bluetooth* Network Using an SMA *Bluetooth* Repeater
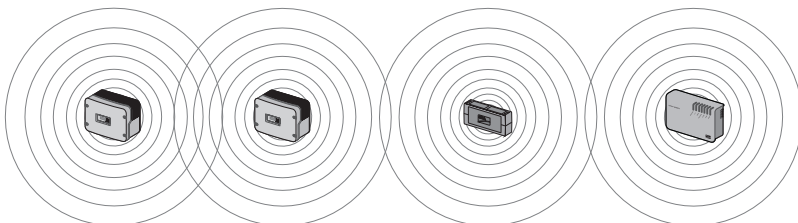
An SMA Bluetooth Repeater transmits the data traffic within the Bluetooth network. If you install the Bluetooth Repeater on the limit of the radio range, the Bluetooth Repeater extends the range of the Sunny WebBox. Thus you can also connect remote devices via Bluetooth.

5.3 Mounting the Sunny WebBox to the Wall

1. Determine the mounting location taking into consideration the mounting / installation location requirements.

2. Use the drilling template to determine the position of the Sunny WebBox and to mark the drilling holes with a pen.

3. Drill holes with $^{15}/_{64}$ in. (6 mm) diameter at the marked points and insert wall anchors.

4. Screw in the screws in a clockwise direction and leave about a $^{15}/_{64}$ in. (6 mm) clearance between the screw head and the wall.

5. Hang the Sunny WebBox onto the screws.

☑ The Sunny WebBox is mounted on the wall.
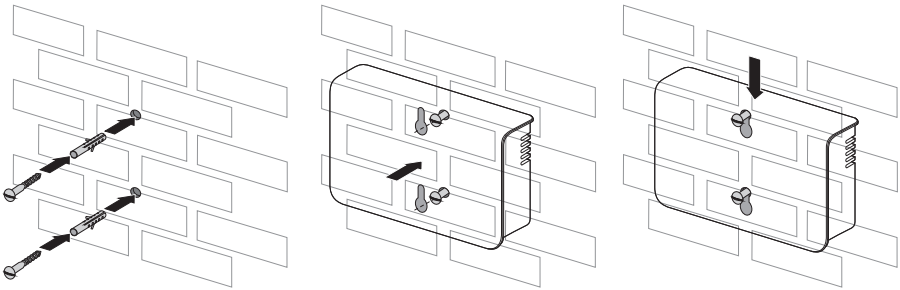
5.4 Mounting the Sunny WebBox on the Top-hat Rail

1. Determine the mounting location taking into consideration the mounting / installation location requirements.

2. Hook the Sunny WebBox with both lower retainers into the lower edge of the top-hat rail.

3. Press the Sunny WebBox upwards and snap it into the upper brackets.

☑ The Sunny WebBox is now mounted on the top-hat rail.
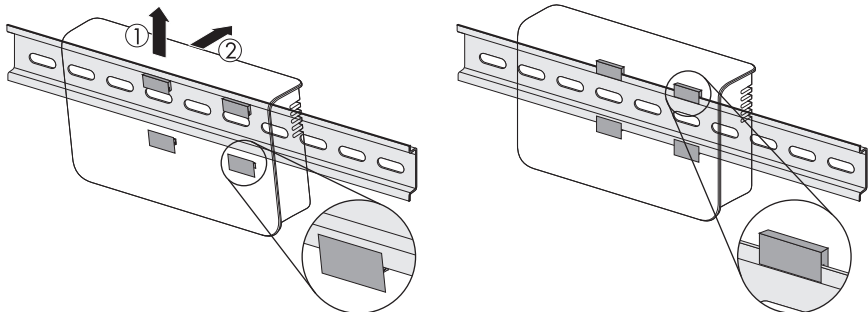
6 Commissioning

6.1 Information on Starting up the Device

Commission the Sunny WebBox using the Sunny WebBox Assistant

If you want to commission the Sunny WebBox for the first time, use the Sunny WebBox Assistant for the Sunny WebBox. The Sunny WebBox Assistant is a software package with which you can carry out the basic configuration of the Sunny WebBox. You can download the Sunny WebBox Assistant from the download area at www.SMA-America.com. Additionally take into consideration the Quick guide for Sunny WebBox commissioning

Proceed as follows:

- Configure the *Bluetooth* settings of the Sunny WebBox (see page 25).
- Connect the Sunny WebBox directly to the computer (see page 26) or to the local network (see page 34).
- Start Sunny WebBox Assistant on your computer.
- Follow the instructions of the Sunny WebBox Assistant.

Commissioning the Sunny WebBox without the Sunny WebBox Assistant

If you want to commission the Sunny WebBox without the Sunny WebBox Assistant, proceed as follows:

- Configure the *Bluetooth* settings of the Sunny WebBox (see page 25).
- Connect the Sunny WebBox directly to the computer (see page 26).
- Configure network settings on the computer (see page 27).
- Configure the Sunny WebBox for the local network (see page 32).

6.2 Configuring *Bluetooth* Settings of the Sunny WebBox

Configure the *Bluetooth* settings of the Sunny WebBox via the rotary switch of the *Bluetooth* module. Use a screwdriver ($\frac{1}{8}$ in. / 2.5 mm).

NOTICE

Changing the NetID during operation of the Sunny WebBox

If you change the NetID during operation of the Sunny WebBox, the device will restart. Afterwards, the Sunny WebBox searches for all devices with the same NetID and displays them in the plant tree.

**i** **At the present time NetID 1 is not supported by the Sunny WebBox.**

A direct connection to an individual SMA *Bluetooth* device via NetID 1 is only possible with the Sunny Explorer software or the Sunny Beam with *Bluetooth*.

Change the NetID of the Sunny WebBox to the NetID of your PV plant (NetID 2 to NetID F).

1. Turn the "MODE" rotary switch to position "0".

2. Turn the arrow of the "NetID" rotary switch to the NetID of the plant. For a layout of the switch positions, see table.
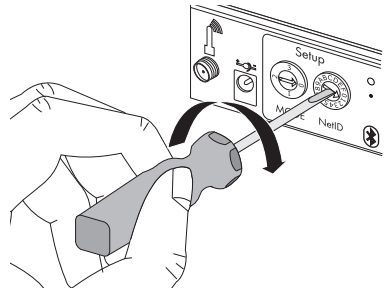
NetID	Function
0	*Bluetooth* is switched off.
1 (Status upon delivery)	No function
2-F	*Bluetooth* is switched on. The Sunny WebBox can network with all SMA *Bluetooth* products with the same NetID. A connection to the Sunny Beam with *Bluetooth* or Sunny Explorer is not possible.

☑ The Sunny WebBox is prepared for the communication via *Bluetooth*.

Now you can connect the Sunny WebBox to the computer with which you would like to configure the Sunny WebBox (see page 26).

6.3 Connecting the Sunny WebBox directly to the Computer
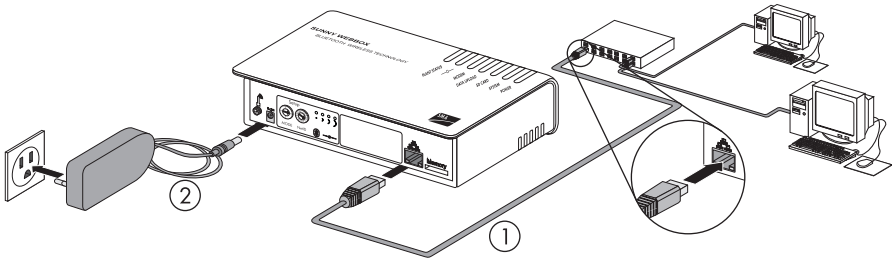
1. Connect the Sunny WebBox using the **blue** network cable (crossover cable) directly to the computer (see ①).
   The connection of the computer is usually marked with the same symbol as the network connection of the Sunny WebBox. If necessary, refer to the computer manual.

   ℹ️ **Recommendation on network cabling**

   If the network cable is too short, observe the following information when buying a longer cable:

   - You will need a crossover cable.

   - Unnecessarily long cables have an adverse effect on the signal quality. The maximum permitted cable length is 330 ft. (100 m) per segment.

   - Use a high quality, at least category 5 (FTP Cat 5) or higher shielded twisted pair cable.

2. Connect the plug-in power supply to the Sunny WebBox and plug this into the socket (see ②).

   ☑ As soon as the "SYSTEM" and "POWER" LEDs glow green, the Sunny WebBox has started up and is ready for operation. The start-up procedure can take up to 90 seconds.

   – If the "SYSTEM" or "POWER" LEDs do not glow green, refer to section 11.1 "General Troubleshooting for the Sunny WebBox" (Page 48).

3. Set the computer to the network area of the Sunny WebBox (see section 6.4 "Configuring Network Settings on the Computer" (Page 27)).

6.4 Configuring Network Settings on the Computer

6.4.1 Information on Network Settings on the Computer

Befor you commission the Sunny WebBox for the first time without the Sunny WebBox Assistant, set the computer to the network area of the Sunny WebBox. Read the following subsection, which describes the procedure for your operating system. If you use an operating system, for which the procedure is not described, refer to the manual of your operating system to find out how to set the computer IP address to 192.168.0.100 and the Subnet mask to 255.255.255.0. You can then configure the Sunny WebBox for a local network via the user interface (see page 32).

> **i** **User rights in the operating system**
>
> You must be registered as an administrator on your computer. This is the only way you can change the network settings. If you have any questions, consult your system administrator.

6.4.2 Windows 7, Windows Vista

1. Start the computer.
2. In Windows select "Start"
3. Enter "ncpa.cpl" in the search field and press enter.

    ☑ The "Network connections" window opens.
4. Double click on the LAN connection via which the Sunny WebBox is connected.

    – If Windows displays several LAN connections, there are probably several network connections installed in the computer. Ensure that you select the correct network connection, with which the computer is connected to the Sunny WebBox. If necessary, refer to the manual of your computer.

    – In the event that the computer displays no LAN connection, refer to section 11.1 "General Troubleshooting for the Sunny WebBox" (Page 48).
5. Select [Properties].

☑ The "LAN connection properties" window opens.

6. Mark "Internet protocol version 4 (TCP/IPv4)" and select [Properties].
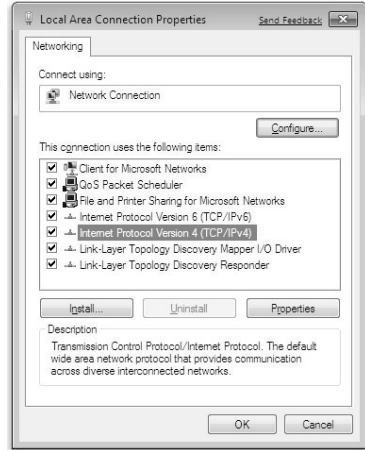
☑ The "Internet Protocol (TCP/IP) Properties" window opens.

ℹ **Noting existing settings**

Make a note of the network settings in the dialog "Internet Protocol Version 4 (TCP/IPv4) Properties". You need the values to reset the computer settings after the configuration of the Sunny WebBox.

---

7. In the "Internet Protocol Version 4 (TCP/IPv4) Properties" window enter the following properties and confirm with [OK]:

   "IP address:" 192.168.0.100

   "Subnet mask" 255.255.255.0

8. Select [OK] in order to save the settings.

9. Close an open dialog with [OK].

☑ The computer is set to the network settings of the Sunny WebBox.
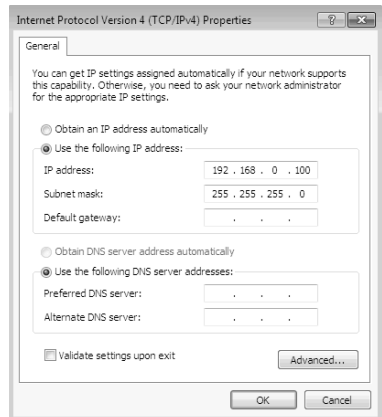
You can now log in for the first time to the Sunny WebBox user interface (see page 6.5 "Logging into the Sunny WebBox" (Page 31)). Configure the device after the log in for a local network or choose additional settings.

6.4.3 Windows XP, Windows 2000

1. Start the computer.

2. In Windows select "Start > Run".

3. In the "Open" field enter "*ncpa.cpl*" and select [OK]

    ☑ The "Network connections" **window opens.**

4. Double click on the LAN connection via which the Sunny WebBox is connected.

    – If Windows displays several LAN connections, there are probably several network connections installed in the computer. Ensure that you select the correct network connection, with which the computer is connected to the Sunny WebBox. If necessary, refer to the manual of your computer.

    – In the event that no LAN connection is displayed on the computer, refer to section 11.1 "General Troubleshooting for the Sunny WebBox" (Page 48).

5. Select [Properties].

    ☑ The "LAN connection properties" **window opens.**

6. Mark "Internet protocol (TCP/IP)" **and select** [Properties].
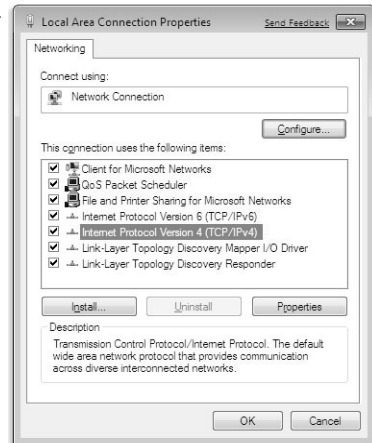
    ☑ The "Internet Protocol (TCP/IP) Properties" window opens.

ℹ Noting existing settings

Make a note of the network settings in the dialog "Internet Protocol Version 4 (TCP/IPv4) Properties". You need the values to reset the computer settings after the configuration of the Sunny WebBox.

7. In the "Internet Protocol (TCP/IP) Properties" window, enter the following values and confirm with [OK].

   "IP address:" 192.168.0.100

   "Subnet mask" 255.255.255.0

8. Select [OK] in order to save the settings.

9. Select [OK] to close the dialog.

☑ The computer is set to the network settings of the Sunny WebBox.
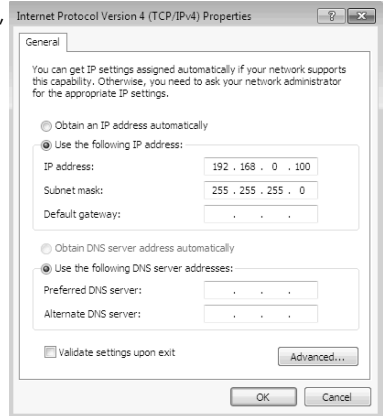
You can now log in to the user interface of the Sunny WebBox (see section 6.5 "Logging into the Sunny WebBox" (Page 31)) and configure the Sunny WebBox for a local network or make further settings.

6.5 Logging into the Sunny WebBox

1. Start web browser (e.g. Internet Explorer).

    i **Activating JavaScript in the Web browser**

    The Sunny WebBox user interface needs JavaScript in order to be able to configure and display the functions and content of the Sunny WebBox. Activate JavaScript in the Web browser If necessary, refer to the help section in your web browser.

2. Enter *"http://192.168.0.168"* into the address bar and press Enter.

    ☑ The Sunny WebBox login page opens.

    – If the page does not open, refer to section 11.1 "General Troubleshooting for the Sunny WebBox" (Page 48).
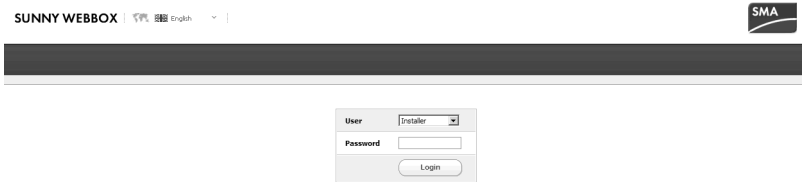
3. Log into the Sunny WebBox as user or installer. Upon delivery the password for the user is: "0000". Upon delivery the password for the installer is: "1111."

    i **Security in the local network**

    Change the user group passwords in order to prevent unauthorized access.

6.6 Configuring Sunny WebBox for the Local Network

6.6.1 Information on Integrating the Sunny WebBox into a Local Network

The following sections describe how to integrate the Sunny WebBox via static network settings into your local network with a router.

In rare cases further network settings are necessary. You must configure further network settings in the following cases.

- You want to connect the Sunny WebBox via DHCP to the local network.
- A Proxy server is in the network.
- You want to make the Sunny WebBox available via the Internet.

Read section 7 "Extended Configuration" (Page 35) for the network settings and ask your network administration.

> **i** **Protecting the Ethernet network from external access**
>
> Protect your Ethernet network through suitable security measures such as via a firewall and through the allocation of secure passwords (see the Sunny WebBox user manual).
> After the first login, change the passwords for each user group.

6.6.2 Applying Static Network Settings to the Sunny WebBox

1. Select "Settings" on the icon bar.

2. Select the "External Communication > Ethernet" parameter group.
3. Select [Edit].
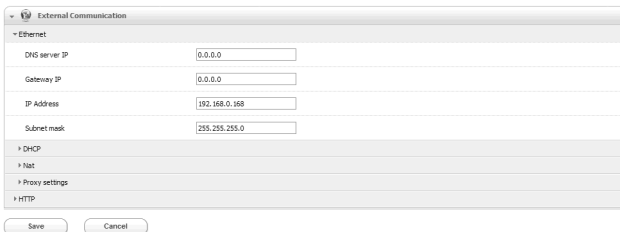
4. In the "DNS server IP" field, enter the IP address of the DNS server (Domain Name System Server). Usually, this is the address of the router.

5. Enter the Gateway IP address of your network into the "Gateway IP" field. Usually, this is the address of the router.

6. In the "IP Address" field, enter the static IP address, under which the Sunny WebBox is to be accessed in the local network (see section 13.7 "Allocating an IP Address in a Local Network" (Page 58)).

7. In the "Subnet mask" field, enter the subnet mask of your network. Normally you can find this information in the router manual.

8. Select [Save].

    ☑ The Sunny WebBox saves the network settings. The save procedure can take up to 30 seconds. Do not separate the Sunny WebBox from the electricity supply during the save procedure. If you disconnect the Sunny WebBox from the energy supply during the save procedure, your data can get lost. The save procedure is complete when the Sunny WebBox opens a new browser page or the Sunny WebBox is no longer available via the old IP.

    ℹ️ **Resetting the computer to the network settings**

    Reset you computer to the original network settings, in order that you can access it via the local network when required (see section 6.4 "Configuring Network Settings on the Computer" (Page 27)).

9. When the save procedure is completed, remove the plug-in power supply of the Sunny WebBox from the plug socket.

10. Remove the blue network cable.

☑ The local network settings are applied to the Sunny WebBox.

You may now connect the Sunny WebBox to the local network (see section 34).

6.6.3 Connecting the Sunny WebBox to the Local Network
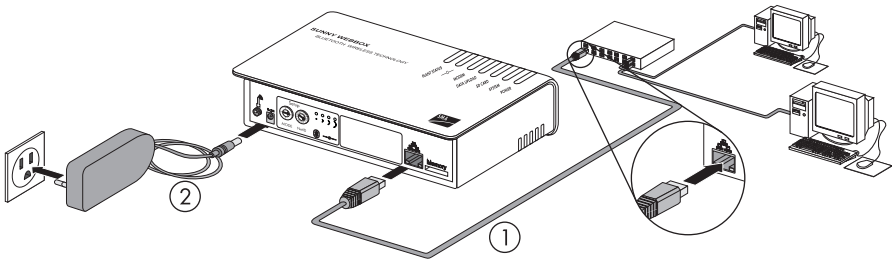
1. Connect the Sunny WebBox directly to the receiver (e.g. router, switch or hub) of the local network using the **red** network cable (patch cable) (see ①). The connection of the receiver is normally marked with the same symbol as the Sunny WebBox network connection. In the event of questions, refer to the receiver manual.

ℹ Recommendation on network cabling

Should the network cable supplied be too short, observe the following information when buying a longer cable:

- You require a patch cable.
- Unnecessarily long cables have an adverse effect on the signal quality. The maximum permitted cable length is 330 ft. (100 m) per segment.
- Use a high quality, at least category 5 (FTP Cat 5) or higher shielded twisted pair cable.

2. Connect the plug-in power supply to the Sunny WebBox and plug this into the socket (see ②).

☑ As soon as the "SYSTEM" and "POWER" LEDs glow green, the Sunny WebBox has started up and is ready for operation. The start-up procedure can take up to 90 seconds.

– If the "SYSTEM" or "POWER" LEDs do not glow green, refer to section 11.1 "General Troubleshooting for the Sunny WebBox" (Page 48).

☑ The user interface of the Sunny WebBox is now available via the new IP address. You can now configure further settings in the Sunny WebBox. Place the Sunny WebBox at the selected mounting / installation location.

7   Extended Configuration

7.1 Ethernet Network

7.1.1 Information on Extended Network Settings

i **Changing extended network settings**

Do not change any network settings in the network devices if you are not clear on the effects of the change. Changes to values could lead to the existing network not functioning or only partially functioning. If you have any questions, contact your network administrator.

i **Sunny WebBox Assistant**

You can use the Sunny WebBox Assistant for commissioning of the Sunny WebBox and for integration into a network. You can download the Sunny WebBox Assistant at www.SMA-America.com.

You can assign static network settings to the Sunny WebBox or obtain these dynamically via a DHCP server. Additionally, it is possible to use a Proxy server for the internet connection.

You make the Sunny WebBox accessible via the Internet thus allowing amongst others the Sunny Portal to access the WebBox. For this you must set a port rerouting in your router. You may have to adjust the HTTP port and the NAT port.

7.1.2 Activating/Deactivating DHCP

The Sunny WebBox can obtain its network settings via a DHCP server (Dynamic Host Configuration Protocol). The Sunny WebBox automatically obtains the IP adress, the subnet mask, gateway and the DNS address from the DHCP server. In order to establish the Sunny WebBox in your network, use the Sunny WebBox Assistant.

Activating DHCP

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.

2. Select the "External Communication > Ethernet" **parameter group**.

3. Select [Edit].

4. If the DHCP-Sever is to assign the network settings to the Sunny WebBox: select "Yes" under "DHCP" "Activated".

5. Select [Save].

☑ The Sunny WebBox obtains the network settings automatically via the DHCP server.

Deactivating DHCP

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.

2. Select the "External Communication > Ethernet" **parameter group.**

3. Select [Edit].

4. Under "DHCP" select "No" in the "Activated" field in order to assign the network settings statically (see section 6.6.2 "Applying Static Network Settings to the Sunny WebBox" (Page 32)) (Status on delivery).

5. Select [Save].

6. You can set the network settings manually.

7.1.3 Proxy Server

If there is a Proxy server in your network, you must set this in the dialog "proxy settings". The proxy settings of the Sunny WebBox are needed for the connection to the Sunny Portal and for firmware updates.

Using the Proxy Server

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.

2. In the "Activated" field select "Yes" in order to use the Proxy server.

3. In the "Login" field enter the login name for the Proxy server.

4. In the "Port" field enter the network port under which the Proxy server is available.

5. In the "Password" field enter the password for the Proxy server.

6. Confirm the password entered in the "Confirm the password" field.

7. In the "Server" field enter the Proxy server IP address.

8. Select [Save].

☑ The Sunny WebBox uses the Proxy server.

Not Using the Proxy Server

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.

2. In the "Activated" field" select "No" in order not to use the Proxy server.

3. Select [Save].

☑   The Sunny WebBox does not use the Proxy server.

7.1.4 Setting the HTTP Port

i **Adjusting of the network ports**

Changing the ports is only necessary in rare cases. Before adjusting the ports, contact your network administrator.

The HTTP port is the network port under which the Sunny WebBox user interface is available. The HTTP Port is set to 80 by default. If the Sunny WebBox should use a different port, you must specified this during the call up of the user interface.

Example: The Sunny WebBox IP address is 192.168.0.168 and you have changed the HTTP port to 8080; thus you must enter http://192.168.0.168:8080 in the address bar of the web browser.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.

2. Select the "External Communication > HTTP" **parameter group.**

3. Select [Edit].

4. In the "Port" field enter the desired Port (Delivery state Port 80).

5. Select [Save].

☑   The HTTP port is saved.

7.1.5 Setting the NAT Port

i **Adjusting of the network ports**

Changing the ports is only necessary in rare cases. Before adjusting the ports, contact your network administrator.

During a data transfer the Sunny WebBox communicates to the Sunny Portal under which IP address and which port the Sunny WebBox is available via the internet. For this you must release the respective port at the router. If the NAT (Network Address Translation) in the router is changed, you must specify the network port that is set in the router. The NAT Port is set to 80 by default.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.

2. Select the "External Communication > Ethernet > NAT" **parameter group.**

3. Select [Edit].

4. In the "Port" field enter the desired Port.

5. Select [Save].

☑   The NAT port is saved.

8   Service Functions

8.1 Updating the Firmware

8.1.1 Information on Firmware Update

You can update the Sunny WebBox firmware. You can install the firmware update via the internet or locally via the SC card. Existing settings of the Sunny WebBox and data from the PV plant remain available after the update procedure. If you want to keep the Sunny WebBox at the most up-to-date level, you have to activate the automatic firmware updates via the internet.

The Sunny WebBox displays the update procedure via the flashing orange "SYSTEM" LED and occasionally via a red running light across all LEDs. The firmware update is complete when the "SYSTEM" LED is green. The Sunny WebBox is again available via the user interface after the update procedure. An update procedure can take up to a maximum of 20 minutes.

i	**Effect on the function during the update procedure**
	The Sunny WebBox restarts during the update process. Restarting affects the function of the Sunny WebBox. For a short time you can not access the user interface.

i	**Do not remove the plug-in power supply during the update procedure.**
	If the firmware update is interrupted, the firmware of the Sunny WebBox can be damaged. The Sunny WebBox thus does not start correctly. Always run the firmware update completely.

8.1.2 Firmware Update via the Internet

If the Sunny WebBox has internet access, you can update the Sunny WebBox via the internet automatically or manually.

Activating / Deactivating the Automatic Firmware Update

When the automatic firmware update is activated, the Sunny WebBox daily checks whether a new firmware update is available. If a new firmware update is available, it is automatically downloaded by the Sunny WebBox. The update procedure starts automatically the following night (11:00 p.m.) when the PV plant is not in operation.

i	**Unexpected interruption of an automatically started update procedure**
	If an automatically started update procedure of the Sunny WebBox is interrupted (e.g. as a result of a power failure), the Sunny WebBox restarts the update procedure in the next defined time period.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.
2. Select the "Device > Update" parameter group.
3. Click on the [Edit] button.
4. In the "Automatic update" field select "Yes" in order to activate the automatic firmware update. (Status upon delivery)

   or

   In the "Automatic update" field select "No" in order to deactivate the automatic firmware update.
5. Select [Save].
☑ The automatic firmware update is set.

Manually Updating the Firmware

NOTICE
Loss of plant data
Only perform a manual firmware update when the PV plant is not in operation (e.g. during the night). Otherwise, losses during the recording of the plant data may occur.

i	You can also carry out manual updates when the automatic firmware update is activated.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.
2. Select the "Device > Update" parameter group.
3. Select [Edit].
4. In the "Check and install update" field select "Execute".

5. Select [Save].

☑ The Sunny WebBox checks whether a firmware update is available. If a firmware update is available, the Sunny WebBox downloads this from the internet and starts the update procedure.

8.1.3 Firmware Update via the SD Card

NOTICE

Loss of plant data

Only perform a manual firmware update when the PV plant is not in operation (e.g. during the night). Otherwise, losses during the recording of the plant data may occur.

NOTICE

Loss of data on the SD card

Do not remove the SD card while the "SD Card" LED is flashing green or orange. This can damage the file system of the SD card and lead to data loss. Depending on the amount of data, the saving process can take some time.

Take note of the information on the SD card (see section 13.1 "Information on the SD Card" (Page 55)).

1. Create a folder on the SD card with the name "UPDATE".

2. Copy the update file (*.up2) in the folder created on the SD card.

3. Remove the plug-in power supply of the Sunny WebBox from the plug socket.

4. Insert the prepared SD card into the Sunny WebBox SD card slot.
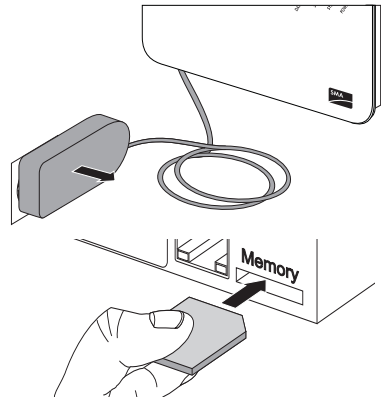
5. Insert the plug-in power supply of the
    Sunny WebBox into the socket.

☑ The update procedure starts.
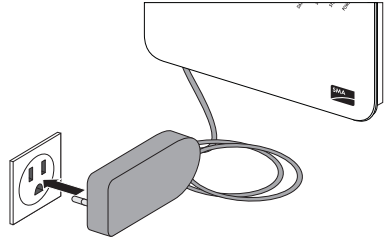
8.2 Stopping the Sunny WebBox

NOTICE

Loss of plant data

Only remove the power supply unit when the PV plant is not in operation (e.g. during the
night). Otherwise, losses during the recording of the plant data may occur.

NOTICE

Loss of data on the SD card

Do not remove the Sunny WebBox from the utility grid while the "SD CARD" LED is flashing
green or orange. This can damage the file system of the SD card and lead to data loss.
Depending on the amount of data, the saving process can take some time.

---

1. Remove the plug-in power supply of the
    Sunny WebBox from the plug socket.

☑ The Sunny WebBox has been stopped.
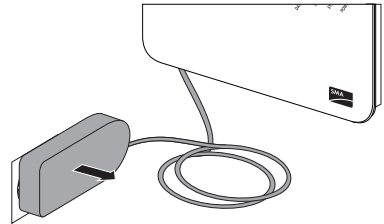
8.3 Restarting the Sunny WebBox via the User Interface

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

   or

   Select "Settings" on the icon bar.

2. Select the "Device > System" parameter group.

3. Select [Edit].

4. In the "Initiate device restart" field, select "Execute".

5. Select [Save].

☑ The Sunny WebBox is restarted. The restart was successful if the "SYSTEM" and "POWER" LEDs light up again. The start-up procedure can take up to 90 seconds.

   – If the "SYSTEM" or "POWER" LEDs do not glow green, refer to section 11.1 "General Troubleshooting for the Sunny WebBox" (Page 48).

8.4 Resetting the Sunny WebBox Using the Reset Button

You can reset the Sunny WebBox using your reset button. The reset button is positioned behind a small hole on the rear panel of the Sunny WebBox. The Sunny WebBox must be supplied with electricity in order that you are able to reset the Sunny WebBox using the reset button.

> **ℹ** **Data backup**
>
> Before you reset the Sunny WebBox, take note of all settings such as network or portal settings, if necessary. In addition save the PV plant data for example via the SD card or the FTP download of the Sunny WebBox in order to avoid data losses.

Depending on how long you press the Reset button, the Sunny WebBox performs the actions listed in the following table.

Duration	Action
1 - 5 seconds	Reset the passwords to the delivered status. All other settings and PV plant data will be saved.
5 - 15 seconds	Reset the network settings to the delivered status. All other settings and PV plant data will be saved.
15 - 30 seconds	Reset all settings (event memory, network settings, portal settings and passwords) of the Sunny WebBox back to delivered status. PV plant data will be fully deleted by the Sunny WebBox.

1. Use a sharp object to activate the hidden reset button through the hole.

☑ The Sunny WebBox resets its settings.
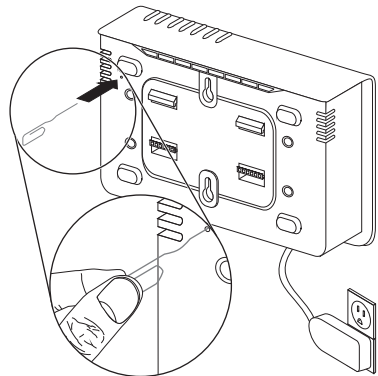
8.5 Determining Current Settings of the Sunny WebBox via the SD Card

With the following steps you can determine the settings and the currently installed firmware of the Sunny WebBox if you do not have access to the user interface.

Take note of the information on the SD card (see section 13.1 "Information on the SD Card" (Page 55)).

1. Insert the SD card into the Sunny WebBox SD card slot.

    ☑ The Sunny WebBox creates a folder with the name "WEBBOX_[serial number]" on the SD card and saves the "config.xml" file there. The writing process is complete when the "SD Card" LED is permanently lit. *Example: WEBBOX_0155000123\config.xml*

2. When the "SD CARD" LED is permanently lit, remove the SD card from the Sunny WebBox SD card slot.

3. Read out the SD card.

4. Open the "config.xml" file in the WebBox_[serial number] folder with a text editor or a web browser.

☑ You can see the network settings in the data "config.xml" (see section 13.2 "Structure of the Config.xml File" (Page 55)).
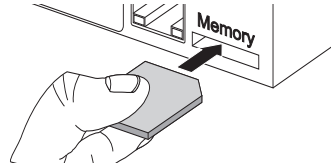
9 Maintenance and Care

9.1 Maintenance

Conduct regular visual inspections of the Sunny WebBox to check for external damages or soiling.

9.2 Care

> **NOTICE**
>
> **Damage to the device due to ingress of liquids.**
>
> - The Sunny WebBox is not waterproof. Protect the Sunny WebBox from wet conditions.
> - To clean the device, use only a dampened cloth so as to prevent the ingress of liquids. If there is a considerable amount of dirt, you can also use a mild, non-abrasive, non-corrosive cleaning agent.

10 Decommissioning

10.1 Disassembling the Sunny WebBox

1. Stop the Sunny WebBox as described in section 8.2 "Stopping the Sunny WebBox" (Page 41).
2. Remove the DC plug of the plug-in power supply from the enclosure.
3. Remove the Sunny WebBox network cable.
4. Depending on the mounting type dismount the Sunny WebBox as follows:

   Wall mounting
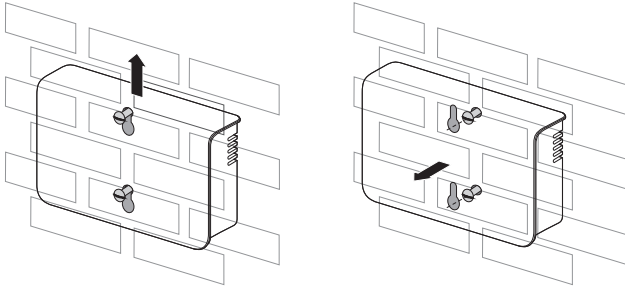
   Top-hat rail mounting
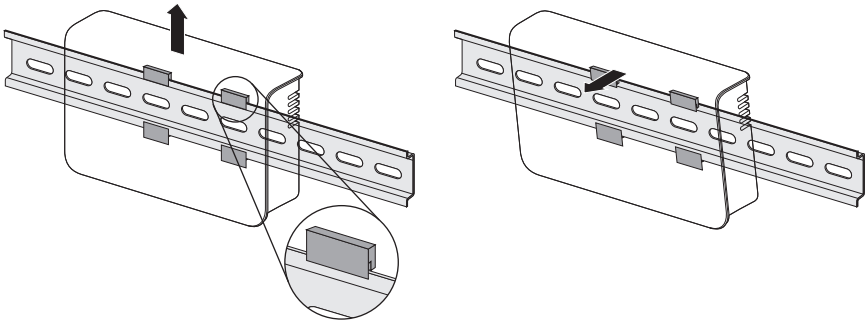
☑ The Sunny WebBox has been dismounted.

10.2 Packaging the Sunny WebBox

When returning the device to us, use packaging which adequately protects the device from damage during transport.. If possible, use original packaging.

10.3 Disposing of the Sunny WebBox

Dispose of the Sunny WebBox at the end of its service life in accordance with the disposal regulations for electronic scrap which apply at the installation site at that time. Alternatively, send it back to SMA with shipping paid by sender, and labeled "FOR DISPOSAL".

11 Troubleshooting

11.1 General Troubleshooting for the Sunny WebBox

No.	Problem	Cause	Rectification
1	The Sunny WebBox is not available via the user interface. **or** You cannot find the Sunny WebBox via the Sunny WebBox Assistant.	The Sunny WebBox is not connected to the network or to the power supply.	• Connect the Sunny WebBox with the network cable directly to the computer or the local network and supply the Sunny WebBox with power (see page 24).
		Incorrect network settings of the network components.	• Use the Sunny WebBox Assistant for commissioning. • Check the network settings of the computer with which you wish to access the Sunny WebBox. Align the network settings if necessary. • Carry out a reset of the Sunny WebBox (see page 43) and repeat the commissioning. • Check the network settings for the individual network components (e.g., router, Proxy server, etc.). Align the network settings if necessary. • Contact your network administrator.
		A Firewall is blocking the connection.	• Deactivate the computer firewall or enable the necessary connection.
		Defective or damaged network components, network cables or plug connections.	• Replace the defective or damaged parts of the network. • Contact your network administrator.

No.	Problem	Cause	Rectification
1	The Sunny WebBox is not available via the user interface. **or** The Sunny WebBox Assistant does not find the Sunny WebBox.	The web browser is incorrectly configured.	• If there is a Proxy server in your network, you must enter an exception for the Proxy server in your web browser (see section 13.4 "Information on your Web Browser" (Page 57)).
		There is no internet connection.	• Install the internet access. If necessary, contact your internet service provider.
		The Sunny WebBox has not been correctly started.	• Remove the Sunny WebBox plug-in power supply from the plug socket and plug it back in after a short time in order to restart the Sunny WebBox. Note that this can lead to loss of collected plant data.
		The Proxy server does not support IPv6.	• Use a Proxy server that supports IPv6.
2	The "SYSTEM" LED is flashing red	A system error has occurred.	• Remove the Sunny WebBox plug-in power supply from the plug socket and plug it back in after a short time in order to restart the Sunny WebBox. Note that this can lead to loss of collected plant data. • Contact the SMA Serviceline.
3	The "POWER" LED is off.	The Sunny WebBox is not supplied with electricity.	• Check the power supply of the plug socket and rectify any faults.

No.	Problem	Cause	Rectification
4	Sunny WebBox does not send any data to the Sunny Portal or the external FTP server (the "DATA UPLOAD" LED is red) **or** The connection test to Sunny Portal or to the external FTP server was not successful.	The data transfer is incorrectly configured.	• Check the settings of Sunny Portal or FTP Push (see the Sunny WebBox user manual). • Perform a connection test. • You must be registered for data transfer to Sunny Portal. Register your Sunny WebBox in Sunny Portal (see the Sunny WebBox user manual).
		There is a fault in the network.	• Check the network settings of the individual network components (e.g., router, Sunny WebBox, computer) and adjust if necessary. • Check the network components for defects or damage. Replace defective or damaged parts of the network. • Perform a connection test.
5	The login to Sunny Portal failed.	Invalid registration data	• Perform a connection test (see the Sunny Webbox user manual).
6	After an FTP download, the Internet Explorer shows old Sunny WebBox data.	The cache properties of Internet Explorer shows old data.	• Use an FTP client in order to load the plant data from the internal FTP server of the Sunny WebBox.
7	The "SD CARD" LED glows red.	The SD card is full.	• Replace the SD card or format the SD card in FAT 32 format.
		The SD card is write-protected.	• Remove the write protection of the SD card.

No.	Problem	Cause	Rectification
8	After a Sunny WebBox is replaced, Sunny Portal contains two plants with the same name.	Double Sunny Portal registration	The Sunny WebBox supplied as a replacement device, logs into Sunny Portal with a new plant identifier. Sunny Portal creates a new plant for this plant ID, even if you gave the plant the same name. • Assign the plant ID of the old plant to the replacement device (see the Sunny WebBox user manual). • In the replacement device enter the e-mail address of a user who has administrator rights for the plant in Sunny Portal. • In Sunny Portal, delete the new plant the replacement device created.
9	Parameters can not be processed.	You do not possess the necessary rights for the parameter.	• Change the user group.
		You have an inverter with upgraded SMA *Bluetooth* Piggy-Back with a software version lower than 02.00.00.R.	The firmware with upgraded SMA *Bluetooth* Piggy-Back does not support the configuration of parameters and the graphical presentation of monthly and annual energy values. • Perform an update of the *Bluetooth* Piggy-Back with the help of Sunny Explorer.
10	Windows can not display the LAN connection.	The network card driver (Ethernet card) is not installed or the network card is defective.	• Check the installation of the network adaptor in the device manager and re-install the driver if necessary. • Replace the faulty network card with a new one.
11	Fault in the user interface display.	JavaScript is not activated.	• Activate JavaScript in the Web browser.

11.2 *Bluetooth* Connection

No.	Problem	Cause	Rectification
1	The Sunny WebBox displays no *Bluetooth* devices.	An incorrect NetID is set.	• Set the NetID of the PV plant (see section 6.2 "Configuring Bluetooth Settings of the Sunny WebBox" (Page 25)) and repeat the commissioning.
		The connection to the *Bluetooth* plant is too weak.	• Shorten the distance to the devices or use an SMA *Bluetooth* Repeater in order to extend the radio range. Repeat the commissioning (see section 24).
		There are already 4 masters connected to the *Bluetooth* plant.	• Remove a Master and repeat the commissioning (see page 24).
		There are already 2 participators connected to the device through which you want to connect to the *Bluetooth* plant.	• Change the position of the Sunny WebBox in order to create a connection via another device in the plant. • Remove a Master from the plant. Further information on SMA *Bluetooth* can be found in the download section at www.SMA-America.com
2	Inverter is not accessible.	The *Bluetooth* connection was interrupted.	• Wait until the Sunny WebBox has automatically re-established the connection.

No.	Problem	Cause	Rectification
	Inverter is not accessible.	Parameters for the *Bluetooth* communication were changed.	When setting parameters that regulate the *Bluetooth* connection (e.g. parameters for the transmitting power and country parameters), the communication via *Bluetooth* is interrupted for some time because the inverters are carrying out a restart of the communication interface. This does not affect inverters with upgraded SMA *Bluetooth* Piggy-Back. • Wait until the inverter has completed a restart. The inverter is then accessible again.
		Inverter with upgraded SMA *Bluetooth* Piggy-Back is in night mode.	• Wait until the inverter is again working in normal operation. The inverter is then accessible again.
		The inverter has not been set to and put into operation under the NetID as your PV plant.	• The inverter must be set to the NetID of your PV plant and commissioned. Contact your installer.
3	Sunny WebBox displays unknown inverters.	The set NetID is already assigned via an unknown *Bluetooth* PV plant.	• You must assign the PV plant with a free NetID. Contact your installer.
4	Sunny WebBox displays an inverter as unknown device in the plant tree.	The inverter with integrated *Bluetooth* has an old software package (only for inverter types SB 3000TL-20, SB 4000TL–20, SB 5000TL–20).	• Update the software package version of your inverter to a version higher than 2.0.

12 Accessories

SMA *Bluetooth* Repeater
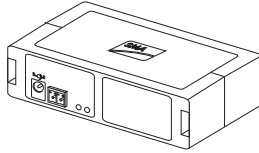
SMA order number	Description
BTREP	SMA *Bluetooth* Repeater for increasing the range of SMA *Bluetooth* products for use indoors.

SD Cards
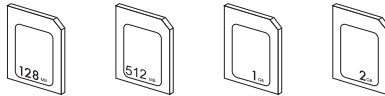
SMA order number	Description
SD card 128 MB	128 MB Secure Digital Memory Card for Sunny WebBox, I-Grade
SD card 512 MB	512 MB Secure Digital Memory Card for Sunny WebBox, I-Grade
SD Card 1 GB	1 GB Secure Digital Memory Card for Sunny WebBox, I-Grade
SD Card 2 GB	2 GB Secure Digital Memory Card for Sunny WebBox, I-Grade

13 Annex

13.1 Information on the SD Card

To ensure that the SD card is functioning properly, use SD cards available from SMA. Compatibility with all SD cards available on the market cannot be guaranteed. The Sunny WebBox does not support SD cards with storage capacities of over 2 GB or SDHC cards.

Only use SD cards which have been formatted with the FAT32 file system. If necessary reformat the SD card.

The Sunny WebBox converts the SD card's file system to TFAT in order to increase data security. If you wish to delete the SD card, you must format the SD card on the computer with the FAT32 file system.

13.2 Structure of the Config.xml File

The "config.xml" configuration file contains information on the Sunny WebBox network settings, the firmware version and further settings.

Example:

<?xml version='1.0' encoding='utf-8'?>

<WebBox>

* <Settings>*

*   <add key='Version' value='1.0.40.B' />*

*   <add key='Plant-ID' value='' />*

*   <add key='User-ID' value='john.doe@SMA-America.com' />*

*   <add key='DHCP' value='False' />*

*   <add key='IP-Address' value='192.168.0.168' />*

*   <add key='SubNetMask' value='255.255.255.0' />*

*   <add key='Gateway' value='192.168.0.1' />*

*   <add key='DNS-Server' value='192.168.0.1' />*

*   <add key='NAT-Port' value='80' />*

*   <add key='Webserver-Port' value='80' />*

*   <add key='Webservice-Port' value='80' />*

* </Settings>*

</WebBox>

Setting	Meaning
Version	The current firmware version of the Sunny WebBox
Plant ID	Plant ID for Sunny Portal
User ID	User ID for Sunny Portal

Setting	Meaning
DHCP	Displays whether the network settings are acquired via DHCP.
IP address	The current IP address of the Sunny WebBox
SubNetMask	The current Subnet mask of the Sunny WebBox
Gateway	The set Gateway IP address
DNS Server	The set DNS server IP address
NAT Port	The currently set NAT port
Web server port	The currently set port of the web server
Web service port	The set port of the web service

13.3 Structure of an XML Data File

Example:

<?xml version="1.0" encoding="utf-8"?>

<WebBox>

 <Info>

  <Created>2010-02-10T01:37:04</Created>

  <Culture>de</Culture>

 </Info>

 <MeanPublic>

  <Key>Sunny WebBox:155000234:Metering.TotWhOut</Key>

  <Mean>761.858</Mean>

  <Base>1</Base>

  <Period>300</Period>

  <Timestamp>2010-02-09T10:55:52</Timestamp>

 </MeanPublic>

 <MeanPublic>

 (...)

 </MeanPublic>

<WebBox>

Setting	Meaning
Info	Information
Create	Date of generation
Culture	Language
UtcOffset	Offset in minutes to UTC (Universal Time Coordinated)
MeanPublic	Data of the mean values

Setting	Meaning
CurrentPublic	Data of the spot values
Key	Name of the element made up of device name, serial number of the device and the parameter name. Individual values are separated by a colon.
	Example: <Key>Sunny WebBox:155000234:Metering.TotWhOut</Key>
Min	Smallest value in measurement interval / merging
Max	Largest value in measurement interval / merging
Mean	Average value in measurement interval / merging
Base	Quantity of the spot values in interval / quantity of the merged values
Period	Length of the measurement interval in seconds
TimeStamp	Time stamp, at which the average was calculated

13.4 Information on your Web Browser

In order to be able to call up the Sunny WebBox user interface, you need a current web browser. You can use the standard settings of your web browser.

Ensure that JavaScript is activated.

If a Proxy server is active in your network, you must set up a Proxy exception rule in your browser (see page 57).

13.5 Setting up a Proxy Exception Rule in Internet Explorer

1. Start Internet Explorer.

2. In Internet Explorer, select "Tools > Internet Options".

3. The "Internet Options" window opens.

4. Select the "Connections" tab, then click [Settings].

5. Select [Advanced].

6. In the "For addresses that start as follows, do not use a Proxy server:" field, enter the address *192,168.**.

7. Confirm entry with [OK] and close all further windows by selecting [OK] in each.

☑ The Proxy exception rule is set up.

13.6 Activating IPv6 in Windows XP SP2

In order to be able to locate the Sunny WebBox with the Sunny WebBox Assistant IPv6 is required.

IPv6 stands for Internet Protocol Version 6 and specifies the procedures that are necessary for data transfer via a package-switching data network.

IPv6 is the successor to IPv4, which is still predominantly found in use in the internet. IPv6 is already activated in Windows Vista, Windows 7, MacOS and Linux. In Windows XP SP2 you must activate IPv6 .

In order to activate IPv6, proceed as follows:

1. In Windows select "Start > Run".
2. In the "Open" field enter "*ncpa.cpl*" and select [OK]
   ☑ The "Network connections" **window opens.**
3. Double click on the LAN connection via which the Sunny WebBox is connected.
   – If Windows displays several LAN connections, there are probably several network connections installed in the computer. Ensure that you select the correct network connection, with which the computer is connected to the Sunny WebBox. If necessary, refer to the manual of your computer.
   – In the event that no LAN connection is displayed, refer to section 11.1 "General Troubleshooting for the Sunny WebBox" (Page 48).
4. Select [Properties].
   ☑ The "LAN connection properties" **window opens.**
5. Activate "Microsoft TCP/IP Version 6"
6. Select [OK].
☑ IPv6 is activated.

13.7 Allocating an IP Address in a Local Network

You select a static IP address (Internet Protocol). Use the address range which is available to your router. In most cases the address range of the router lies between 192.168.0.1. and 192.168.255.254. If necessary refer to the manual of your router.

Note during the allocation of the IP address that the first three address parts of the IP address must be identical for all participants of the same network. You may not allocate the same IP address twice.

Example:

Router:	**192.168.0.**1
Computer 1	**192.168.0.**2
Computer 2	**192.168.0.**3
Sunny WebBox	**192.168.0.**168

14 Technical Data

14.1 Sunny WebBox

Mechanical Data

Width x height x depth	10 in. x 5 $\frac{1}{8}$ in. x 2 $\frac{1}{4}$ in. (255 mm x 130 mm x 57 mm)
Weight	1 2/3 lb. (750 g)

Power Supply

Typical power consumption	4 W
Maximum power consumption	12 W

Environmental Conditions

Ambient temperature	− 4 °F ... +149 °F (− 20 °C ... +65 °C)
Relative humidity, non condensing	5 % ... 95 %

Communication

Sunny Boys, Windy Boys with SMA *Bluetooth* interface	*Bluetooth*
Computer	10/100 MBit Ethernet
Maximum number of SMA *Bluetooth* devices with 1 Master	50
Maximum number of SMA *Bluetooth* devices with 2 Masters	25
Maximum *Bluetooth* free-field communication range	330 ft. (100 m)
Max. communication range of Ethernet per segment	330 ft. (100 m)

Other

User interface language	German, English, French, Italian, Spanish, Greek, Korean, Portuguese, Czech, Dutch
Internal circular buffer	12.5 MB
Additional memory via SD memory cards*	128 MB/512 MB/1 GB/2 GB

* optional

14.2 Plug-in Power Supply

14.2.1 CINCON, TRG30R 120

Mechanical Data

Width x height x depth	4 $\frac{1}{4}$ in. x 2 $\frac{1}{4}$ in. x 1 $\frac{1}{3}$ in.
	(107.8 mm x 57.5 mm x 33.5 mm)
Weight	$\frac{2}{3}$ lb. (300 g)

Power Supply

Voltage	100 V ... 240 V AC, 50/60 Hz
Nominal current	0.8 A

15 FCC Compliance

SMA system monitoring unit, model Sunny WebBox with Bluetooth.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes or modifications not expressly approved by SMA Production, LLC could void the user's authority to operate this equipment. Contact SMA for more information.

RF-exposure Statement

The SMA Sunny Beam *Bluetooth* contains a modular transmitter. Thus it must have a separation of at least $7\,^{7}/_{8}$ in. between the antenna and the body of the user or nearby persons, excluding hands, wrists, feet, and ankles.

16 Contact

If you have technical problems concerning our products, contact the SMA Serviceline. We require the following information in order to provide you with the necessary assistance:

- The current firmware version of the Sunny WebBox.
- Serial number and hardware version of the Sunny WebBox.
- Type of communication interface between Sunny WebBox and the inverters.
- Type and serial numbers of the inverters connected to the plant.

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