SMA

Device for plant monitoring
SUNNY VIEW
User Manual

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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This manual contains important instructions for the following products:

- Sunny View

This manual must be followed during installation and maintenance.

The product 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 product. To reduce the risk of personal injury and to ensure the safe installation and operation of the product, you must carefully read and follow all instructions, cautions and warnings in this manual.

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.

Symbol	Description
⚠ **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.

General Warnings

> ### ⚠ WARNING
>
> General Warnings
>
> All electrical installations must be made in accordance with the local and *National Electrical Code*®
> ANSI/NFPA 70 or the *Canadian Electrical Code*® CSA C22.1. This document does not and is not
> intended to replace any local, state, provincial, federal or national laws, regulation or codes
> applicable to the installation and use of the product, including without limitation applicable
> electrical safety codes. All installations must conform with the laws, regulations, codes and
> standards applicable in the jurisdiction of installation. SMA assumes no responsibility for the
> compliance or noncompliance with such laws or codes in connection with the installation of the
> product.
>
> The product contains no user-serviceable parts.
> For all repair and maintenance, always return the unit to an authorized SMA Service Center.
>
> Before installing or using the product, read all of the instructions, cautions, and warnings in this
> manual.

Table of Contents

1 Information on this Manual

Validity

This manual is valid for the Sunny View type VIEW-10.GR1.

The type designation can be found on the type label on the back of the Sunny View.

Target Group

This manual is intended for end users.

Additional Information

Additional information is available at www.SMA-America.com:

Title	Document type
Sunny View	Quick reference guide

Symbols

Symbol	Explanation
⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a situation which, if not avoided, can result in property damage.
ⓘ	Indicates information that is important for a specific topic or objective, but is not safety-relevant.
☐	Indicates a requirement for meeting a specific goal.
☑	Desired result
✖	A problem that might occur

Typography

Typography	Usage	Example
"light"	• Display messages • Parameters • Connections • Slots • Text boxes	• Enter your e-mail address and password in the "E-mail" and "Password" text boxes.
bold	• Elements to be selected • Elements to be entered.	• Enable the **dynamic** option.
>	• Series of elements that are to be selected on the software user interface or display.	• Select **Settings > Date**.
[Button/Key]	• Buttons • Keys	• Select [Next].

Nomenclature

The following nomenclature is used in this manual:

Complete designation	Designation in this manual
System comprised of a PV array, monitoring devices and inverters	Plant
SMA *Bluetooth*® Wireless Technology	*Bluetooth*
SMA America Production, LLC and SMA Solar Technology Canada Inc.	SMA

Abbreviations

Abbreviation	Designation	Explanation
NetID	Network Identification	Identification number for SMA Bluetooth network
MSL	Mean Sea Level	-
PUK	Personal Unlocking Key	Code number, which enables access to SMA devices, after the loss of the password
PV	Photovoltaics	-
SDHC	Secure Digital High Capacity	Memory card with a storage capacity up to 32 GB
WLAN Wi-Fi	Wireless Local Area Network	-

2 Safety

2.1 Intended Use

The Sunny View is a communication device that receives, displays and stores data from
SMA inverters.

The Sunny View is only suitable for indoor use.

The Sunny View may only be used with original accessories produced by SMA or accessories
recommended by SMA.

The data collected by Sunny View on the amount of power generated by your plant may deviate from
the electricity meter data.

- The Sunny View data cannot be used for billing purposes.

The Sunny View may only be used in accordance with the enclosed documentation. Any other use
can result in personal injury or property damage.

- The Sunny View is only to be operated using the supplied plug-in power supply and in the
  voltage range intended for this (see Section 12 "Technical Data", page 45).

The enclosed documentation is an integral part of this product.

- Read and follow the documentation for the proper and optimum use of the Sunny View.

- Keep the documentation (quick reference guide and user manual CD) in a convenient place for
  future reference.

RF Exposure

This equipment should be installed and operated with a minimum distance of 8 in. (20 cm) between
the radiator and your body. No individual shall be nearer than 2.5 cm to the device for a period of
6 minutes at any time.

2.2 Safety Precaution

Preventing unauthorized access

Plants are delivered with "0000" as the default password. In other words, unauthorized users can
gain access to the data of the plant.

- Change the default plant password (see Section 8.14).

3   Product Description

3.1 Sunny View

The Sunny View is a communication device that receives, displays and stores data from
SMA inverters. The Sunny View displays plant data in the form of slides on the display.

The Sunny View can be connected to the Internet via a WLAN. If there is a connection to the Internet,
the Sunny View can display data from Facebook and Twitter, as well as newsfeeds.
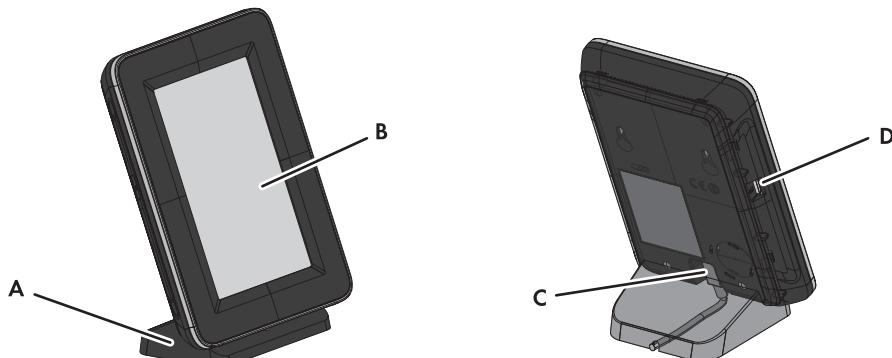
Figure 1:   Sunny View design

Position	Description
A	Tabletop stand
B	Display
C	Grid connection
D	SDHC card slot

The display is used to control the device and display information.

The Sunny view and the inverters communicate via *Bluetooth*.

The Sunny View saves plant data in its internal memory. If an SDHC card is available, the plant data
can be transferred to it.

PV-
PV+
PV-
PV+
PV-
PV+
PV-
PV+

Electric
power company

Internet

Consumption
meter

Router

Feed-in meter

SUNNY VIEW

PV inverter

L
S
AC miniature
circuit-breaker

Inverter
grounding

Distributor

Main fuse

S
L

grounding connection
of PV array

Distributor grounding
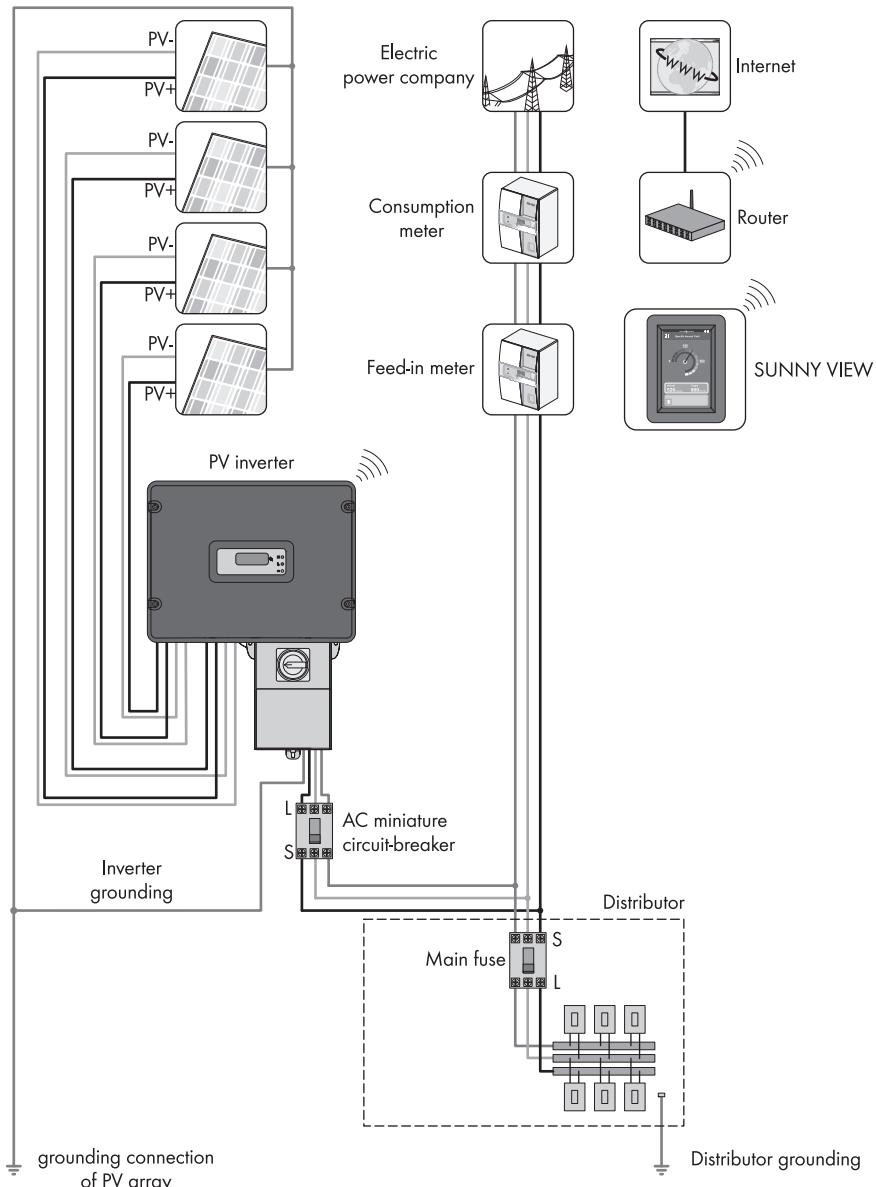
Figure 2:   Illustration of a plant with Sunny View (example)

3.2 Type Label

You can identify the Sunny View by the type label. The type label can be found on the rear of the Sunny View. If the Sunny View is positioned on the tabletop stand, you must remove it from the tabletop stand to see the type label.

The information on the type label is intended to help you use the Sunny View in a safe manner and receive better customer support from the SMA Service Line. The type label must be permanently affixed to the Sunny View. You can find the following information on the type label:

- Type designation
- Serial number
- WLAN MAC address
- Operating temperature

4   Operation

4.1 Menu Structure

The menu consists of several menu items. Using the menu items, you can control the slides displayed and configure the Sunny View settings.

You can call up the menu using ▦.

Home			
Charts			
Events			
Settings	General	Display	Brightness
			Display activity
			Scaling of day charts
		Sounds	Error alert
			Key clicks
		Information	Serial number
			Firmware version
			Hardware
			Bluetooth version
			WLAN Mac ID
		Date & time	Automatic
			24-hour format
			Time zone
			Date
			Time
		International	Language
			Country
	Slide Show	Slide duration	
		PV visualization	
		Online data	Newsfeed
			Facebook
			Twitter
			Weather
	Wireless	*Bluetooth*	Connection quality
			NetID
			Refresh after
		Wi-Fi networks	Refresh after
			Other networks
	PV plant	New search	Plant search
			Device search
		Information	
		Plant password	
	Service	Update	
		Factory settings	

		Back-up file	Generating Back-Up File
			Restore back-up file
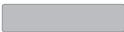
4.2 Operating the Sunny View

Touch the display with your finger or the supplied touch-screen stylus pen to navigate the Sunny View and to enter information.

NOTICE

Sharp or pointed objects can damage the display

- Use your finger or the touch-screen stylus pen to control the Sunny View.

Symbol	Name	Description
	Button	To activate a button, simply tap it once.
	Menu	Tap this button to access the menu.
	Back	Tap this button to go back to the previous menu.
	Text box	To enter numbers or text, tap the text box. A keyboard will appear on the display.
	Drop-down list	Simply tap drop-down lists once to open up lists.
	List	Lists are marked by a bar on the right-hand side of the display. You can scroll through lists by sliding your finger up or down to any position on the display.
	Option	To enable an option, simply tap it. Enabled options are colored. Only one option may be enabled at any one time.
	Checkbox	You can enable or disable a checkbox by tapping it. Enabled checkboxes are colored.
	Slider	You can move the slider by dragging your finger to the left or right.
	Info icon	Press this icon to display additional information.

5   "Home" Menu Item

5.1 Layout of the "Home" Slides

The slides in the "Home" menu item display the status of the plant and the plant data. If there is a connection to the Internet, the "Home" slides display online data from the Internet. The slides in the slide-show change automatically after a preset display time (see Section 8.21). You can scroll through the "Home" slides manually by dragging your finger from the left or right.

You can call up the "Home" slides using ⊞ **> Home**.
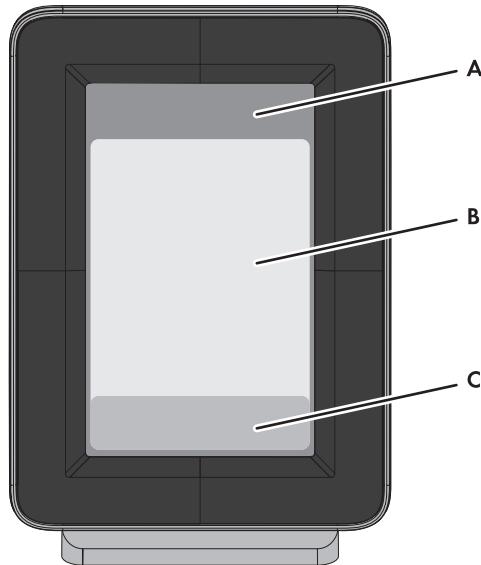
Figure 3:   Layout of the "Home" slides

Position	Description
A	Header
B	Plant Data
C	Online Data

5.2 Header Layout

The header of the "Home" slides is located in the top section of the display.
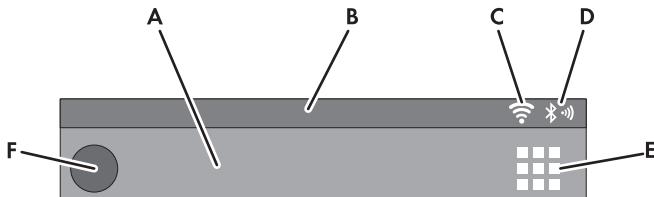
Figure 4:   Header Layout

Position	Description	Description
A	Name	Name of the slide
B	Date and time	Current date and time
C	WLAN	Quality of the WLAN connection
D	*Bluetooth* signal strength	Quality of the *Bluetooth* connection
E	Menu	Tap this button to access the menu.
F	Event symbol	If there is an unread event, the symbol for the relevant event is displayed (see Section 7 ""Events" Menu Item", page 25). If there are several unread events, the symbol for the most serious event is displayed. Tip: tap the symbol to access the "Events" view.

5.3 Plant Data

Plant data is divided into multiple slides. You can scroll through the slides by dragging your finger from the left or right. The slides change automatically after a preset time. You can change the preset time (see Section 8.21 "Changing the Duration of the Slide Show", page 36).

You can enable or disable the slides under settings (see Section 8.22 "Selecting PV Visualization", page 36).

Slides

Description	Description
Overview	This slide provides an overview of the entire yield of your plant.
Power and energy	This slide shows the current power, the daily power and the total energy yield of the plant.
Power chart	This diagram shows the daily power of the plant.
Yield estimate	This slide shows the total and daily revenue for grid feed-in.
CO_2 avoidance	This slide shows the daily and overall amount of CO_2 saved.
Saved kilometers/miles	This slide shows the daily and overall number of kilometers/miles saved.
Errors and warnings	This slide appears automatically when an error or warning occurs. An alarm sounds only when an error event occurs and the inverter stops feeding power to the grid (see Section 8.4 "Setting the Error Alert", page 28). Press the [Close] button to acknowledge the event. Press the [Details] button to access the event list (see Section 7). If not acknowledged, the alarm will sound again after a preset interval.
Weather	If meteorological data is available from the Internet, this slide shows the following meteorological data for the preset location: • Current weather • Forecast for the next three days

5.4 Online Data

Requirement for displaying online data:

☐   An Internet connection must be established (see Section 8.18 "Setting up a WLAN Connection", page 35).

The online data changes after a set interval. To scroll through the data, drag your finger from the left or right. By tapping the online data you can zoom to a full-screen view. Tap the [Close] button to minimize the view.

The following types of online data are available:

- Facebook
- Twitter
- Newsfeed

The Sunny View will display the last 10 messages of the last 7 days. Control elements within the messages (e.g. hyperlinks) will not function. The displays can be enabled or disabled individually (see Section 8.20 "Configuring Online Data", page 35).

You **cannot** send data via the Internet using the Sunny View.

6   "Charts" Menu Item

The "Charts" menu item presents the yield of the entire plant or an individual inverter depending on the selected time period.

You can call up the "Charts" menu item using ⊞ **> Charts > My plant**.

You can scroll through the daily, monthly and annual charts by dragging your finger from the left or right.
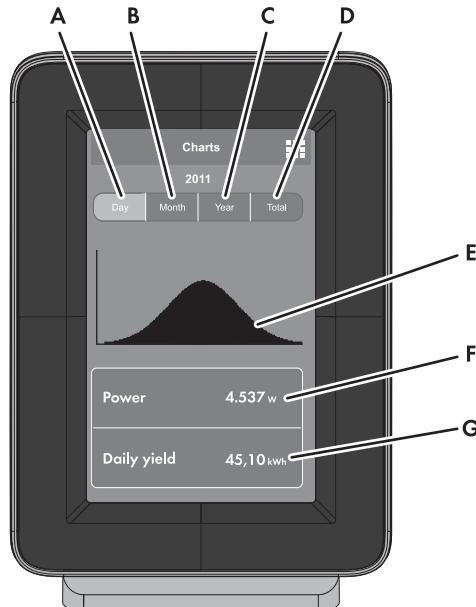
Figure 5:   Chart layout

Position	Description
A	Button for displaying the daily yield
B	Button for displaying the monthly yield
C	Button for displaying the annual yield
D	Button for displaying the total yield
E	Diagram
F	Current power
G	Daily, monthly, annual or total yield

7 "Events" Menu Item

The "Events" menu item shows all error messages, warnings and information.

You can call up the "Events" menu item using ⊞ **> Events**.
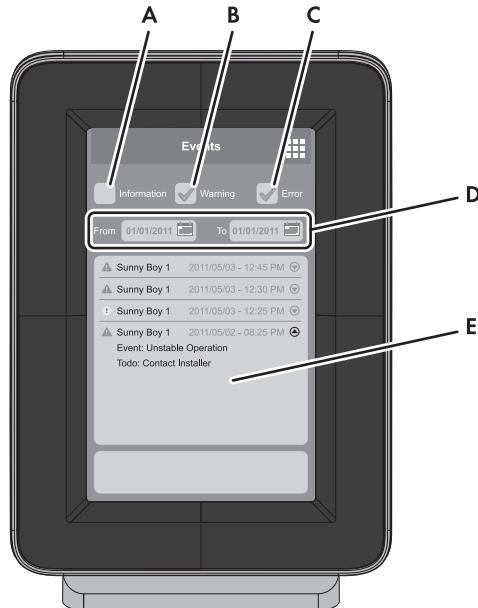
Figure 6:   Layout of an event message

Position	Description
A	Checkbox for displaying information
B	Checkbox for displaying warnings
C	Checkbox for displaying errors
D	Buttons for selecting the time frame
E	List of events

Types of Event:

Sunny View displays symbols to indicate the three types of event.

Type of event	Description
Error	The inverter is not working properly and is not feeding power to the grid. • Open the event details for more information. • Contact your installer and inform him about the event message and the serial number of the inverter in which the event occurred.
Warning	The inverter is not working properly, but is still feeding power to the grid. The warning symbol is displayed if, for example, there is a frequent grid overvoltage.
Information	Settings have been configured on the inverter (e.g., parameters have been changed).

Symbols and Meaning of Event Types

• Incoming: the event is occurring
• In progress: the event has existed for some time and could not yet be automatically remedied.
• Outgoing: the event has come to an end.

Symbol	Description
	Error in progress
	Incoming error
	Outgoing error
	Warning in progress
	Incoming warning
	Outgoing warning
	Information in progress
	Incoming information
	Outgoing information

8   "Settings" Menu Item

8.1 Adjusting the Brightness

The display may be too bright or too dark depending on lighting conditions. If this is the case, you can adjust the brightness of the Sunny View.

1.   Select ⊞ **> Settings > General > Display**.

2.   Drag the brightness slider to the right or left to adjust the brightness to the preferred level.

8.2 Disabling the Display

You can disable the display or configure the settings in such a way that it disables automatically after a preset time. When disabled, the display is switched off. This means the Sunny View requires less electric current.

1.   Select ⊞ **> Settings > General > Display**.

2.   Set the desired time period for disconnection.

3.   If you would like to disconnect after a preset time:

   •   Enable the **Off after** option.

   •   Select the desired time in the appropriate drop-down list.

4.   If you do not wish to configure any other settings, select ⊞.

   ☑ After the preset time, the display will be disabled.

5.   Simply touch the display to re-enable it.

8.3 Setting the Scaling of the Daily Graph

You can choose between static or dynamic scaling for the daily graph. If static scaling is selected, the diagram can be scaled to a set maximum threshold (e.g., the maximum power of your plant). With dynamic scaling, the maximum thresholds of the measured values are used as the basis for scaling.

1.   Select ⊞ **> Settings > General > Display**.

2.   If you prefer static scaling for the daily graph:

   •   Enable the **Static** option.

   •   Enter the power of your plant in the appropriate text box.

   Tip: You can reset the scaling to match the maximum power of your plant's inverter by pressing the [Reset to plant power] button. This value can deviate from the actual maximum power of your plant.

3.   If you prefer dynamic scaling for the daily chart, enable the **Dynamic** option.

4.   If you do not wish to configure any other settings, select ⊞.

8.4 Setting the Error Alert

There is an error alarm when an error occurs. If the error is not eliminated, there will be another error alarm after a preset interval.

1. Select ▦ **> Settings > General > Sounds**.
2. To enable the error alert, enable the **Error alert** checkbox.
3. To disable the error alert, disable the **Error alert** checkbox.
4. Select the repetition interval for the error alert in the "Alarm sounds every" drop-down list.
5. Drag the volume slider to the left or right until you reach the preferred volume.
6. Select the alarm tone in the "Alarm tone" drop-down list.
7. If you do not wish to configure any other settings, select ▦.

8.5 Setting the Key Clicks

1. Select ▦ **> Settings > General > Sounds**.
2. To enable the key clicks, enable the **Key clicks** checkbox.
3. To disable the key clicks, disable the **Key clicks** checkbox.
4. Drag the volume slider to the left or right until you reach the preferred volume.
5. If you do not wish to configure any other settings, select ▦.

8.6 Identifying the Sunny View

1. Select ▦ **> Settings > General > Information**.
   - ☑ A list containing the following information will open:
   - – "Serial Number"
   - – "Firmware version"
   - – "Hardware"
   - – "*Bluetooth* version"
   - – "WLAN Mac ID"
2. To return to the menu, select ▦.

8.7 Setting the Language

1. Select ▦ **> Settings > General > International > Language**.
2. Select the desired language.
3. If you do not wish to configure any other settings, select ▦.

8.8 Country Settings

1. Select ⊞ **> Settings > General > International > Country**.

2. Select a country.

3. Check the country settings. Change the country settings if necessary.

    Tip: Press the [Reset] button to restore the default country settings.

4. Select [Next].

5. If you do not wish to configure any other settings, select ⊞.

8.9 Setting the Date and Time

The Sunny View can be set for automatic time synchronization if a WLAN connection is available (see Section 8.18 "Setting up a WLAN Connection", page 35) and the "Automatic" checkbox is activated.

You can choose between a 12-hour or 24-hour time format by selecting the "24-hour format" checkbox accordingly.

┌───┐
│ i │ **Diagrams may be incorrectly displayed**
└───┘

Changing the set time while the inverter is feeding in can cause diagrams to be displayed with permanent errors.

   •   Only change the set time when the inverters are **not** feeding in (e.g., when it is dark).

1. Select ⊞ **> Settings > General > Date & time**.

2. In the "Time zone" field select the desired time zone.

3. In the "Date" field, select the date.

4. Set the date using [+] and [-].

5. Select [Accept].

6. In the "Time" field, select the time.

7. Set the time using [+] and [-].

8. Select [Set].

9. If you do not wish to configure any other settings, select ⊞.

8.10 Searching for a New Plant

If you want the Sunny View to monitor a different plant, you can search for a new plant.

Requirement:

☐   The plant may have a maximum of 12 inverters.

1.   Select ▦ **> Settings > PV plant > New search > Plant search**.
2.   Select [Search].

> ℹ️   **Settings and CSV files**
>
> All Sunny View settings are saved. If an SDHC card is inserted, it will also contain the CSV files of the previous plant.

☑ The Sunny View searches for plants within its range.
☑ The Sunny View shows all plants found in the search with their NetIDs.

3.   Select the desired plant.
4.   Select [Next].

> ℹ️   **Possible restart of Sunny View**
>
> If the Sunny View was previously connected to another plant, it will restart itself.

5.   Enter the plant password.
6.   Select [Next].
7.   If you want to use the 24-hour format for the time display, select the **24-hour format** checkbox.
8.   Set the time zone, date format and time.
9.   Select [Next].
10. Select the desired slides for the plant.
11. Select [Next].

8.11 Adding a New Device

If you are commissioning a new device and the Sunny View does not automatically add the device to the plant, you need to carry out a device search.

Requirements:

☐   The plant may have a maximum of 12 inverters.

☐   The new device must have the same NetID as all the other plant devices (see manual for the *Bluetooth* device).

1.   Select ▦ **> Settings > PV plant > New search > Device search**.

☑ The Sunny View lists the new devices.

2.   Select the desired device.

3.   Select [Next].

4.   Enable the **as a plant extension** option.

5.   Select [Next].

6.   Enter the password for the new device.

ⓘ **Default password on delivery**

The default password on delivery is 0000.

☑ The Sunny View connects with the new device and transfers the existing plant password to the new device.

7.   Select [Next].

8.   Enter the device name.

9.   Select [Next].

10.   If you want to add another device, select [Add] and proceed to Item 2.

11.   Select [Home].

8.12 Replacing a Device

If you want to replace an existing device with a new device, you will have to perform a device search in the Sunny View.

Requirement:

☐ The new device must have the same NetID as all the other plant devices (see manual for the *Bluetooth* device).

1. Select ⊞ **> Settings > PV plant > New search > Device search**.
2. Select [Search].
   ☑ The Sunny View searches for devices within its range.
   ☑ The Sunny View shows all the devices in your plant that were found in the search.
3. Select the desired device.
4. Select [Next].
5. Enable the **as a device replacement** option.
6. Select [Next].
7. Select the device you want to replace.
8. Select [Next].
9. Enter the device password.
10. Select [Next].
11. Enter the plant password.
12. Select [Next].
13. Enter the device name.
14. Select [Next].
15. If you want to replace another device, select [Add].
16. Select [Home].

8.13 Changing the Device Name

The default name of the device is the serial number of the inverter. You can assign a unique name to the device.

1. Select ⊞ **> Settings > PV plant > Information**.
2. Select the desired device.
3. Select [Device name].
4. Enter a device name.
5. Select [Save].

8.14 Changing the Plant Password

The plant password is used for all devices in the plant to prevent unauthorized access. The plant password can have a maximum of 12 characters. The password may contain the following characters: A to Z, a to z, 0 to 9, ? , _ , ! and - .

1. Select ⊞ **> Settings > PV plant > Plant password**.

2. Enter a new password in the "Set password" and "Confirm password" text boxes.

3. Select [Save].

8.15 What to Do in Case of a Lost Plant Password

If you forget the plant password, contact the SMA Service Line. You will be given a personal unlocking key (PUK) for each device, which can then be used to unblock the device. After you enter the PUK, the password for each device must be changed to a shared plant password (see Section 8.16).

If you are not the plant owner, you must communicate the new plant password to the plant owner.

8.16 Changing the Device Password

The device password can have a maximum of 12 characters. The password may contain the following characters: A to Z, a to z, 0 to 9, ? , _ , ! and - .

1. Select ▦ **> Settings > PV plant > Information**.
2. Select the desired device.
3. Select [Device password].
4. Enter a new password in the "Set password" and "Confirm password" text boxes.
5. Select [Save].

8.17 Displaying Connected Devices

1. Select ▦ **> Settings > PV plant > Information**.

    ☑ The Sunny View displays a list of connected devices with the following symbols:

Symbol	Status	Significance
	Neutral	The status of the device is currently being updated.
	OK	The device is operational and working properly.
	Warning	The device is not working properly, but can still feed power to the grid.
	Error	The device is not working properly and does not feed power to the grid.
	Communication Errors	Unable to communicate with the device at the moment. Possible causes include the overnight shutdown setting for the inverter.
	Lock	A password other than the plant password has been set for the device. Unable to access the device.

2. Select the desired device.

    ☑ Sunny View displays the type, serial number and software version of the device.

8.18 Setting up a WLAN Connection

The WLAN router is used to establish a wireless connection to the Internet. You can define the interval at which the Sunny View updates online data. The WLAN connection is deactivated by default.

Router requirements:

☐   The router must support DHCP and DHCP must be enabled for the router.

☐   The router must support the transmission standard IEEE 802.11b or IEEE 802.11g.

1. Select ▦ **> Settings > Wireless**.
2. Enable the **Wi-Fi networks** checkbox.
3. If the desired network is not displayed, search for the network:
    - Select [Other networks].
    - In the "Name" field, enter the name of the network.
    - In the "Security" field, select the desired encryption method.
    - Select [Accept].
4. If the network is password-protected, enter the password in the text box.
5. Using the drop-down list "Refresh after", set how often the Sunny View online data is updated from the Internet.
6. If you do not wish to configure any other settings, select ▦.

8.19 Checking and Setting Up a *Bluetooth* Connection

The connection of the Sunny View to your plant is established via *Bluetooth*. You can check the quality of your *Bluetooth* connection and the NetID, and set how often the Sunny View plant data is updated.

1. Select ▦ **> Settings > Wireless**.
    ☑ The quality of the *Bluetooth* connection and the NetID is displayed.
2. Using the drop-down list "Refresh after", set how often the Sunny View plant data is updated.
3. If you do not wish to configure any other settings, select ▦.

8.20 Configuring Online Data

1. Select ▦ **> Settings > Slide show > Online data**.
2. If you want a newsfeed:
    - Enable the **Newsfeed** checkbox.
    - Type the Internet address of the RSS feed or Atom feed in the "URL" text box.
3. If you want to connect to Facebook:
    - Enable the **Facebook** checkbox.
    - Enter the e-mail address and password of the Facebook account in the "E-mail" and "Password" text boxes.

- Select [Login].

4. If you want to connect to Twitter:

- Enable the **Twitter** checkbox.
- Enter the user name/e-mail address and password of the Twitter account in the "User name or e-mail" and "Password" text boxes.
- Select [Login].

5. If you want to display the weather:

- Enable the **Weather** checkbox.
- Enter the city or ZIP code in the "City/ZIP" text box.

6. If you do not wish to configure any other settings, select ▦.

8.21 Changing the Duration of the Slide Show

The slides in the slide show change after a preset display time.

1. Select ▦ **> Settings > Slide show**.
2. Select the desired display time in the "Slide duration" drop-down list.
3. If you do not wish to configure any other settings, select ▦.

8.22 Selecting PV Visualization

Sunny View shows the slide show only with slides that you have selected. For some slides you will need to specify additional information using the text boxes, drop-down menus and sliders. Tap the Info icon for more information. You will find an overview of the slides in the "Plant data" section (see Section 5.3).

1. Select ▦ **> Settings > Slide show > PV visualization**.
    ☑ A list of all slides will open.
2. Select and enable the slides you want to display.
3. If you do not wish to configure any other settings, select ▦.

8.23 Activating Demo Mode

The demo mode simulates the process of operating a plant. It can therefore be used to demonstrate how the Sunny View is operating. The Sunny View simulates a plant with a power of 4.5 kWp.

Activating Demo Mode After Commissioning

Requirement:

☐   The Sunny View must not be connected to a plant.

1. Select ▦ **> Settings > PV plant > New search > Plant search**.
2. Select [Demo mode].
3. If you do not wish to configure any other settings, select ▦.

9 Maintenance and Care

9.1 Safely Removing the SHC Card

Always remove the SDHC card according to the following procedure.

> **⚠ CAUTION**
>
> **Damage to the SDHC card**
>
> If the SDHC card is removed while data is being written to it, it may be damaged and data may be lost.
>
> • Safely remove the SDHC card.

1. Call up the menu using ▦.

2. In the lower section of the menu, select **Safely remove the SDHC card**.

   ☑ The message "The SDHC card can now be removed." appears.

3. Remove the SDHC card

9.2 Performing an Update

Perform an update so that the Sunny View can download the latest data. When the Sunny View is updated, all plant data and display settings will be saved.

Necessary equipment:

☐ Computer with Internet connection and an SDHC card slot.

☐ SDHC card

1. If you have not yet carried out an update using the SDHC card, you must connect the SDHC card to the computer and create a folder labeled **UPDATE** on the SDHC card.

2. Download the update file in the download section of www.SMA-America.com and then save it on the SDHC card in the "UPDATE" folder.

3. Remove the SDHC card from the computer.

4. Push the SDHC card into the slot on the Sunny View.

5. Select ▦ **> Settings > Service > Update**.

   ☑ The following message appears: "New update file found on the SDHC card. Do you wish to start the update?"

   ✖ Is the message not shown?

   The SDHC card does not contain an update file. The update file or SDHC card is defective.

   • Perform update again.

   • If the update fails after several attempts, contact the SMA Service Line.

6. Select [Start update].

☑ The update procedure starts. The Sunny View displays the message "Update successful!" and restarts.

✖ "Update failed!" message appears on the display.

The update file or SDHC card is defective.

- Perform update again.
- If the update fails after several attempts, contact the SMA Service Line.

NOTICE

Damage of the Sunny View due to disconnection from the electricity supply

Disconnecting the Sunny View from the electricity supply during the update procedure or when restarting may damage the Sunny View.

- **Do not** remove the plug-in power supply from the socket-outlet during the update procedure or when restarting.

9.3 Restoring Default Settings

If you wish to restore the default setting of the Sunny View, note that all plant data and display settings will be deleted. The saved plant data and CSV files will remain on the SDHC card.

Restoring the default settings can take several minutes.

1. Select ▦ **> Settings > Service > Factory settings**.

    ☑ The following message appears: "After a reset to factory settings, your plant data and settings are deleted."

2. Select [Reset].

9.4 Generating Back-Up File

When you generate a back-up file, the Sunny View will save all plant data and settings to your SDHC card. A back-up file will allow you to restore all your data when you replace the Sunny View or reset the device to the default settings.

You can generate back-up files automatically or manually. In automatic mode the Sunny View will automatically generate a back-up file at regular intervals.

Requirement:

☐ An SDHC card must be inserted in the slot.

1. Select ▦ **> Settings > Service > Back-up file > Generate back-up file**.
2. If you prefer automatic back-up creation:
    - Select the option **automatically**.
    - Select the desired interval from the drop-down list.
3. If you would like to generate a back-up file manually, activate the option **manually**.

4. Select [Next].
   ☑ The following message appears: "Back-up file was generated successfully!"
   ☑ The following message appears: "Please insert an SDHC card with at least xx MB free space."
   The SDHC card does not have enough memory available or is not inserted into the device.
   • Insert a SDHC card with enough memory.
   • Select [Repeat].

9.5 Restoring Sunny View Data from a Back-up File

| i | **Overwriting plant data and settings**

> When you restore a back-up, all plant data and settings are overwritten.

Requirement:

☐ An SDHC card containing the back-up file must be inserted in the slot.

1. Select ▦ **> Settings > Service > Back-up file > Restore from back-up file**.
   ☑ The following message appears: "Do you want to restore the back-up file with all data and settings on this Sunny View?"

2. Select [Restore].
   ☑ The following message appears: "The data and settings were successfully restored from the back-up file!"
   ✖ The following message appears: "No back-up file found."
   • Make sure an SDHC card with the back-up file is inserted into the device.

10 Decommissioning

10.1 Decommissioning the Sunny View

- Remove the plug-in power supply from the Sunny View and the socket-outlet.

10.2 Disposing of the Sunny View

- Be sure to observe all applicable regulations when disposing of the Sunny View.
- To have SMA dispose of the Sunny View, send the Sunny View back to SMA at your own cost, labeled "ZUR ENTSORGUNG" ("FOR DISPOSAL").

11 Troubleshooting

Problem	Cause
Sunny View does not list the NetID of your PV plant.	In your plant, no device is within the radio range of the Sunny View. **Corrective measures:** • Reduce the distance between the Sunny View and the plant device.
	Devices of your plant are not in operation. **Corrective measures:** • Commission the devices.
	The NetID 0 (*Bluetooth* off) is set for the devices. **Corrective measures:** • Set the NetID of your plant for the devices.
Sunny View does not list all the devices of your plant.	Sunny View completed the plant search before all devices were connected to one another. For plants with many devices it may take several minutes until all devices are connected to one another. **Corrective measures:** • Repeat plant search.
	Not all devices are connected to one another. The wireless connection of several devices may be disturbed by ambient conditions. **Corrective measures:** • Check the connection quality of the devices (see the respective manual). The connection quality of all devices must at least be "good".
	Not all devices are connected to one another. In certain devices, the NetID of your plant may not be set. **Corrective measures:** • Make sure that the NetID of your plant is configured on the devices.

Problem	Cause
	Inverters with retrofitted SMA *Bluetooth* Piggy-Back (if applicable) shut down overnight. Therefore, the Sunny View cannot establish a connection to these inverters at night.
	Corrective measures:
	• As soon as the inverters switch on in the morning, the Sunny View is able to establish a connection to them.
The Sunny View lists your inverters as well as other inverters from other plants.	A different *Bluetooth* plant within the radio range of the Sunny View uses the same NetID as your *Bluetooth* plant.
	Corrective measures:
	• Determine a free NetID for your plant and configure it on all devices.
The Sunny View is not connecting with the *Bluetooth* devices.	A different NetID is configured for the Sunny View than for the other *Bluetooth* devices.
	Corrective measures:
	• Make sure that the NetID configured on the Sunny View is the same as on the other *Bluetooth* devices.
	There are too many masters in the *Bluetooth* plant (e.g. Sunny Beam, Sunny WebBox with *Bluetooth*).
	Corrective measures:
	• For plants with up to two inverters, a maximum of two masters can be used.
	• For plants with three or more inverters, a maximum of 4 masters can be used.
Bluetooth connection quality of the Sunny View is not at least "Good".	The Sunny View is too far away from your plant or there is interference with the wireless connection. Disturbances can be caused by, for example, walls or ceilings that shield the wireless signal too effectively.
	Corrective measures:
	• Place the Sunny View closer to a device of your plant.
	Instead of the plug-in power supply provided, you are using a plug-in power supply that is not suitable for the Sunny View.
	Corrective measures:
	• Use only the plug-in power supply provided.

Problem	Cause
An alarm can be heard.	An error has occurred in an inverter.
	Corrective measures:
	• Call up the error details.
	• Contact your installer and inform him/her about the event message and the serial number of the inverter in which the event occurred.
	Tip: If you no longer wish to be notified of errors, you can switch off the alarm sound (see Section 8.4 "Setting the Error Alert", page 28).
Alarm did not sound when an error occurred.	The alarm is disabled or the volume is too low.
	Corrective measures:
	• Set the alarm sound (see Section 8.4).
	Instead of the plug-in power supply provided, you are using a plug-in power supply that is not suitable for the Sunny View.
	Corrective measures:
	• Use only the plug-in power supply provided.
The display no longer switches on.	**Corrective measures:**
	• Check the grid connection.
	Instead of the plug-in power supply provided, you are using a plug-in power supply that is not suitable for the Sunny View.
	Corrective measures:
	• Use only the plug-in power supply provided.

Problem	Cause
None or only some of the online data is displayed.	WLAN connection is not active. **Corrective measures:** • Make sure the router is switched on. • Make sure the router supports DHCP. • Make sure DHCP is enabled for the router. • Check the WLAN connection (see Section 8.18) and your access data (see Section 8.16).
	WLAN connection is too weak. The wireless connection may be disturbed by ambient conditions. **Corrective measures:** • Check the quality of the WLAN connection on the Sunny View. Place the Sunny View closer to the router if necessary.
	Online data is not enabled. **Corrective measures:** • Make sure that online data is configured properly (see Section 8.20).
	Instead of the plug-in power supply provided, you are using a plug-in power supply that is not suitable for the Sunny View. **Corrective measures:** • Use only the plug-in power supply provided.
Diagrams are displayed with gaps or pointed forms.	After commissioning the Sunny View, the time in the Sunny Beam was set ahead or behind. This action only affects the diagram display, not the calculated energy values.
The "Home" slides do not change.	Only one slide is activated. **Corrective measures:** • Select other slides for display (see Section 8.22 "Selecting PV Visualization", page 36).
Unable to activate demo mode.	Demo mode is only available when the Sunny View is not connected to a plant. **Corrective measures:** • Restore the default settings (see Section 9.3). IMPORTANT: If you restore the default settings of the Sunny View, all plant data and display settings will be deleted.

12 Technical Data

Mechanical Data

Width x height x depth without tabletop stand	6 in. x 4 $\frac{1}{4}$ in. x $\frac{15}{16}$ in.(151.9 mm x 109 mm x 23.5 mm)
Width x height x depth with tabletop stand	6 in. x 4 $\frac{1}{4}$ in. x 1 in. (151.9 mm x 109 mm x 25.5 mm)
Weight without tabletop stand	8 $\frac{5}{8}$ oz. (245 g)
Weight with tabletop stand	10 $\frac{3}{8}$ oz. (293 g)

Voltage supply

Voltage supply	Plug-in power supply
Input voltage	90 V to 240 V AC, 50 Hz/ 60 Hz
Typical power consumption	3.75 W
Maximum power consumption	8 W
Maximum current consumption	1.6 A

Ambient Conditions

Ambient temperature	+32° F to +104° F (0°C to +40°C)
Humidity, non-condensing	5% to 95%
NEMA class	NEMA 1
Installation site	indoors

Communication

Inverter communication	*Bluetooth* Wireless Technology Class 1
Maximum number of devices: Inverters	12
Maximum range in free-field conditions	328 ft. (100 m)

Features

Display	LCD
Resolution	480 px x 800 px
Operation	Touch screen
Display languages	German / English / French / Greek / Italian / Japanese / Dutch
Memory	Ring buffer*
Internal memory for plant data	16 MB
SDHC card type	microSD
Minimum memory of the SDHC card	512 MB
Recommended maximum memory of the SDHC card	8 GB
Minimum data volumes depending on SDHC card memory	Daily yields: 90 days Monthly yields: 30 years Events: 50

* Always contains the last 13 monthly files and 90 daily files.

13 Compliance Information

FCC Compliance

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 America, LLC could void the user's authority to operate this equipment.

This equipment complies with FCC radiation exposure limits set forth for an occupational environment. This equipment should be installed and operated with minimum distance of 8 in. (20 cm) between the radiator and your body.

IC Compliance

This device complies with Industry of Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

•   This device may not cause interference, and

•   This device must accept any interference, including interferences that may cause undesired operation of the device.

This equipment complies with Canada radiation exposure limits set forth for uncontrolled environments in accordance with RSS-102. This transmitter must not be co-located or be operated in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance of 8 in. (20 cm) between the radiator and your body.

FCC

Cet appareil est conforme à la partie 15 des réglementation FCC. L'opération est sujette aux conditions suivantes:

1. Cet appareil ne doit pas entraîner d'interférences nuisibles et
2. Cet appareil doit accepter toutes les interférences reçues, y compris les interférences qui pourraient entraîner un fonctionnement indésirable.

NOTE : Cet équipement a été testé et est conforme avec les limites imposées pour un appareil numérique de Classe B, conformément à la partie 15 des réglementations FCC. Ces limites ont été conçues pour fournir une protection raisonnable contre toute interférence nuisible dans une installation domestique. Cet équipement génère, utilise et peut émettre une énergie radioélectrique et s'il n'est pas installé et utilisé conformément aux instructions, il peut produire des interférences nuisibles dans les communications radio. Néanmoins, il n'existe pas de garantie contre le fait que des interférences peuvent se produire dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception de fréquences de radio ou de télévision, ce qui peut être déterminé en allumant et en éteignant l'équipement, l'utilisateur est encouragé à essayer de corriger l'interférence en utilisant une ou plusieurs des mesures suivantes:

*   Réorienter ou relocaliser l'antenne de réception.
*   Augmenter la séparation entre l'équipement et le récepteur.
*   Connecter l'équipement à une prise de courant sur un circuit différent de celui auquel le récepteur est connecté.
*   Consulter le concessionnaire ou un technicien radio/TV expérimenté pour plus d'aide.

L'utilisateur est prévenu que des changements ou des modifications n'ayant pas été autorisés expressément par SMA America, LLC peuvent entraîner la nullité de l'autorisation à l'utilisateur de mettre cet équipement en service.

Cet équipement est conforme aux limites d'exposition aux rayonnements définies par le FCC pour des environnements professionnels. Cet équipement doit être installé et mis en service avec une distance minimum de 8 in. (20 cm) entre le radiateur et votre corps.

IC

Cet appareil est conforme avec la licence d'Industrie Canada - sauf le/les standard(s) RSS. Le service est soumis aux deux conditions suivantes :

*   cet appareil ne doit pas provoquer d'interférences et
*   cet appareil doit accepter toute interférence, y compris les interférences pouvant entraîner un service de l'appareil indésirable

Cet équipement est conforme aux limites d'exposition aux rayonnements définies par le Canada pour les environnements non contrôlés, conformément à la norme RSS-102. Cet émetteur ne doit pas être installé ou utilisé en conjonction avec d'autres antennes ou émetteurs. Cet équipement doit être installé et mis en service avec une distance minimum de 8 in. (20 cm) entre le radiateur et votre corps.

14 Online services, libraries, open source licences

When using this equipment you will also be using online services from other providers. These are listed in the section "Online services". The use of these services is governed by the current terms of use of each of the providers listed in the section "Online services". By using the online services you also declare your agreement with the regulations listed. The use of libraries and software provided by 3rd parties is governed in the same way as that of online services.

Online services

This software is provided "as is" and any express or implied warranties and liability to correct errors are disclaimed. In no event shall Supplier be liable for any direct, indirect, incidental or consequential damages or infringement of any Intellectual Property Rights arising in any way out this software. Customer assumes all risk for the selection of this software, including risks to achieve Customer's intended results and for the installation, use and results obtained from it. Furthermore, this software uses/may use 3rd party services. The 3rd party service is governed under separate terms & conditions which are available at

- Facebook Terms of Use: http://www.facebook.com/terms.php
- Facebook Platform Policies: http://developers.facebook.com/policy/
- Twitter Terms of Service: http://twitter.com/tos
- Twitter API Terms of use: https://dev.twitter.com/terms/api-terms
- Google Weather http://www.google.com

Customer accepts that these terms and conditions shall be applied to this software. Same applies for the use of the chosen Newsfeed service.

Libraries

The Sunny View software uses the AChartEngine library licensed under ASL 2.0, the microlog4android library licensed under Apache 2.0 and MIT, and the twitter4j-core-android library licensed under JSON.

Open source licences

Sunny View is based on the Android 2.6.35.3 kernel and the U-Boot 2009.08 version, which are licensed under the GPLv2 Open Source Licence. A copy of the GPLv2 Licence is provided on the included CD. You can request the source code with modifications from the SMA Service Line. Copyright notices are integrated into the source code.

In addition, the Sunny View uses the Apache Licence 2.0 with Android 2.2 (API level 8, revision 2). A copy of the Apache Licence 2.0 is provided on the included CD.

15 Contact

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

- Hardware version of the Sunny View
- Firmware version of the Sunny View
- Firmware version of the SMA *Bluetooth* Piggy-Back in the inverter (if present)
- Type and serial number of the inverter

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