Accessory

SMA BLUETOOTH® REPEATER

Installation Guide

BTREPIN-IEN091910 | 98-0011810 | Version 1.0

EN

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1 About this Manual

This manual describes how to install and commission the device. Store this manual where it will be accessible at all times.

1.1 Area of validity

This manual applies to Firmware version 1.0.

1.2 Target group

This manual is for qualified electrical technicians and the user. Some tasks described in this manual may only be performed by qualified electrical technicians. These tasks are identified with a safety warning.

1.3 Additional Information

You can download additional information about SMA *Bluetooth* Wireless Technology from the download area at www.SMA.de.

1.4 Symbols Used

The following types of warnings and general information appear in this document as described below.

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!

ATTENTION!

"ATTENTION" indicates a situation that can result in property damage if not avoided!

Information

"Information" provides tips that are valuable for the optimal installation and operation of your product.

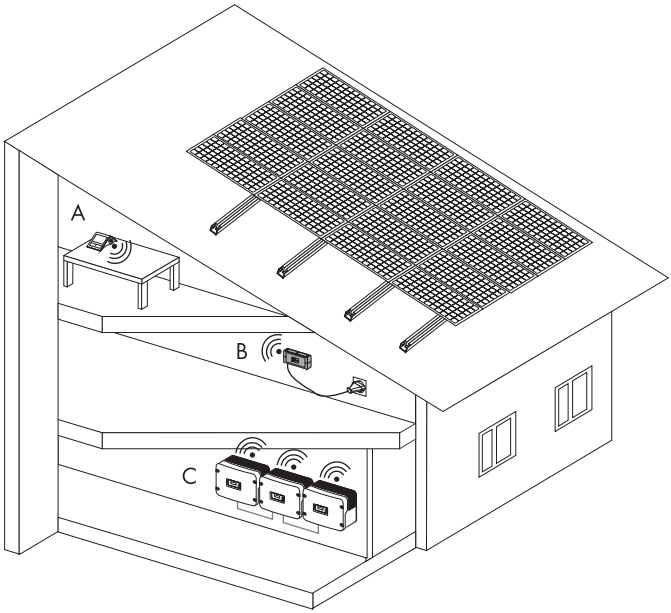
2 Safety

2.1 Appropriate Usage

The SMA *Bluetooth* Repeater comes into operation during unfavorable installation conditions between SMA devices with *Bluetooth* Wireless Technology in order to overcome radio gaps or to improve poor radio connections. The SMA *Bluetooth* Repeater uses *Bluetooth* Class 1 and has a maximum reach in open air of up to 100 m. The SMA *Bluetooth* Repeater is compatible with all *Bluetooth* devices from SMA Solar Technology.

The SMA *Bluetooth* Repeater is only to be employed according to the information in this manual. Any other application can lead to personal injuries or damage to equipment.

Example of the application of the SMA *Bluetooth* Repeater



A	Communication device (here: Sunny Beam with *Bluetooth*)
B	SMA *Bluetooth* Repeater
C	Inverters with *Bluetooth* from SMA Solar Technology

2.2 Safety Instructions

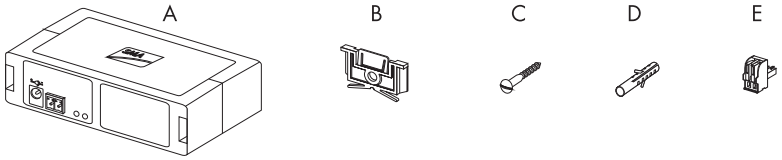
Possible communication fault via *Bluetooth* Wireless Technology.

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

- Install the *Bluetooth* device at a distance of at least 1 m to the following devices:
  - WLAN devices
  - Microwave oven
  - Other devices using the 2.4 GHz frequency band

3 Unpacking

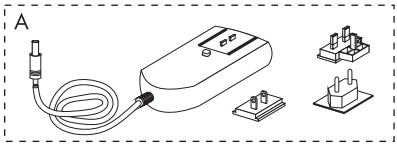
3.1 Packing List



A	1	SMA *Bluetooth* Repeater
B	1	Bracket for wall- or top hat rail mounting (is clamped to the rear side of the SMA *Bluetooth* Repeater upon shipping)
C	1	Screw
D	1	Screw anchor
E	1	2-pole plug

Optional packing list

The packing list represented here is dependent upon the order option.



A	1	Plug-in power supply with country adapters

3.2 SMA *Bluetooth* Repeater identification

You can identify the SMA *Bluetooth* Repeater from the type label. The type label is on the right side of the device.

4 Mounting

4.1 Determining the mounting- /installation location

Mounting- /installation location requirements:

Possible communication fault via *Bluetooth* Wireless Technology.

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

- Install the *Bluetooth* device at a distance of at least 1 m to the following devices:
  - WLAN devices
  - Microwave oven
  - Other devices using the 2.4 GHz frequency band

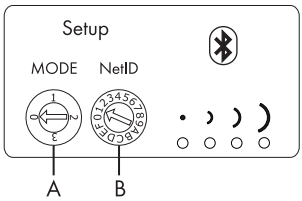
- The SMA *Bluetooth* Repeater is only suitable for the interior.
- The maximum cable length of 10 m for the supply of power may not be exceeded.

Procedure

You determine the mounting- or installation location by changing the distance between the SMA *Bluetooth* Repeater and the devices with critical connection-quality until all devices show at least a good connection-quality (two rings).

Proceed as follows:

1. Turn the rotary switch "MODE" (A) to position "0".



Setting the NetID

2. Turn the rotary switch "NetID" (B) to the NetID of the system.

Connecting the power supply

3. Position the SMA *Bluetooth* Repeater approximately half way between the devices with critical connection-quality.
4. Connect the power supply as described in section 5 "Electrical Connection" (page 14).

Checking the connection-quality and determining the mounting- /installation location

5. Check wether all devices have a connection-quality of at least "good":

   Inverters: two rings in the display

   SMA *Bluetooth* Repeater: one blue and two yellow LEDs

   Communication device and Sunny Explorer: see relevant manual

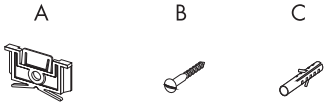
   ☑ If the connection-quality of all devices is at least "good", the *Bluetooth* Repeater can be mounted or installed there.

   – If the connection-quality of all devices is not at least "good", see section 9.1.2 "Connection-quality (Bluetooth LEDs)" (page 22).

☑ The mounting- /installation location is determined.

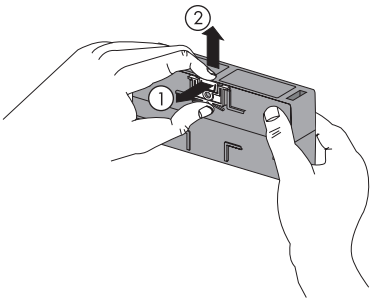
4.2 Mounting the SMA *Bluetooth* Repeater on the wall

Mounting accessories provided



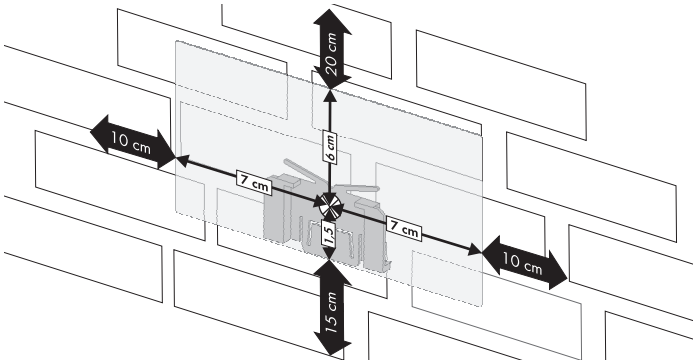
A	1	Bracket (is clamped to the rear side of the SMA *Bluetooth* Repeater upon shipping)
B	1	Screw
C	1	Screw anchor

1. Remove the bracket on the rear side of the SMA *Bluetooth* Repeater as shown in the illustration.



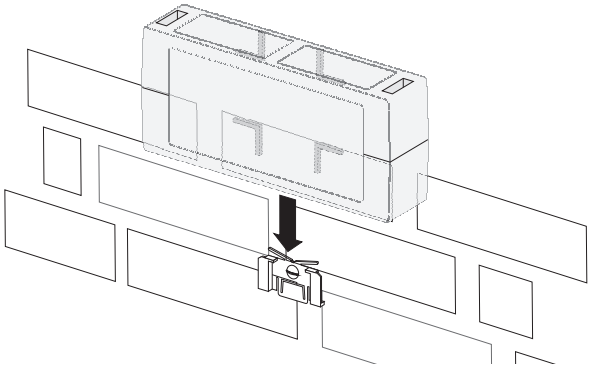
2. Check the minimum distances against the illustration and mark the position of the drill hole.

   Assembly room underneath will be needed for cable room.



3. Drill the hole and affix the bracket to the wall using the screw and screw anchor.

4. Mount the SMA *Bluetooth* Repeater onto the bracket as shown in the illustration.



☑ The SMA *Bluetooth* Repeater is mounted.

How to detach the SMA *Bluetooth* Repeater from the wall is described in section 8.1 "Dismantling the SMA Bluetooth Repeater" (page 19).

ATTENTION!

Damage to the SMA *Bluetooth* Repeater or the bracket.

The SMA *Bluetooth* Repeater can loosen itself from the bracket and fall off.

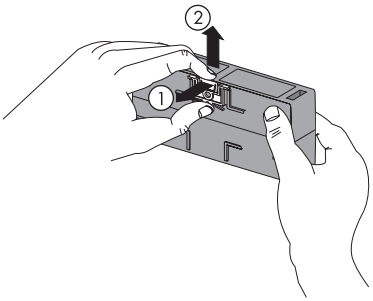
- Hold the SMA *Bluetooth* Repeater fast when the cable is being removed or inserted.

4.3 Mounting the SMA *Bluetooth* Repeater on the DIN rail

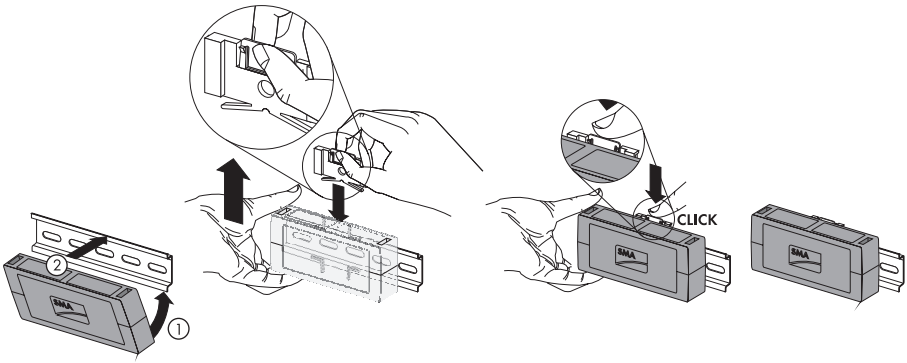
Mounting accessories provided

A	1	Bracket (is clamped to the rear side of the SMA *Bluetooth* Repeater upon shipping)

1. Remove the bracket on the rear side of the SMA *Bluetooth* Repeater as shown in the illustration.



2. Hold the SMA *Bluetooth* Repeater fast during the entire mounting process by simultaneously pushing it up.



3. Hook the lower rail of the SMA *Bluetooth* Repeater onto the lower edge of the DIN rail.
4. Push the SMA *Bluetooth* Repeater onto the DIN Rail and push up and hold.
5. Insert the bracket centrally into the guide on the SMA *Bluetooth* Repeater from above and push down, until the bracket snaps into place.

☑ The SMA *Bluetooth* Repeater is mounted.

How to detach the SMA *Bluetooth* Repeater from the wall is described in section 8.1 "Dismantling the SMA Bluetooth Repeater" (page 19).

ATTENTION!

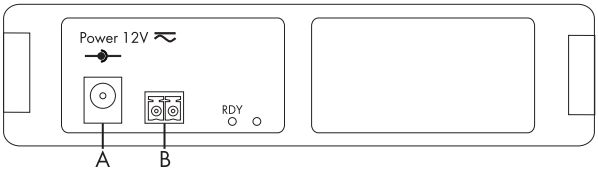
Damage to the SMA *Bluetooth* Repeater or the bracket.

The SMA *Bluetooth* Repeater can loosen itself from the bracket and fall off.

- Hold the SMA *Bluetooth* Repeater fast when the cable is being removed or inserted.

5 Electrical Connection

5.1 Overview of the Connection Area



A	Plug-in power supply connection
B	Connection of other power supplies (DC- or other AC-source)

5.2 Connecting the power supply

You can connect the power supply via the following types, which are described in this section:

- Plug-in power supply
- Other power supplies (DC-source or other AC source)

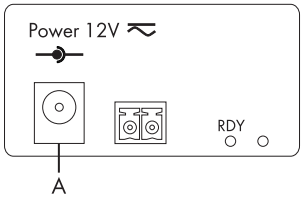
5.2.1 Plug-in power supply

ATTENTION!

Damage to the SMA *Bluetooth* Repeater by incorrect plug-in power supply.

The SMA *Bluetooth* Repeater can be damaged by technically unsuitable plug-in power supplies.

- Use only the plug-in power supply intended as an accessory for the SMA *Bluetooth* Repeater. See section 11 "Accessories" (page 24).



1. Insert the plug of the plug-in power supply into the "Power 12V" terminal (A) of the SMA *Bluetooth* Repeater.
2. Plug the relevant country adaptor onto the plug-in power supply.
3. Insert the plug-in power supply plug into a wall plug.

   ☑ The "RDY" LED is permanently on (green).

   – If the "RDY" LED is not permanently on, see section 9.1.1 "Power supply (RDY LED)" (page 20).

☑ The SMA *Bluetooth* Repeater is connected to the power supply.

5.3 Other power supplies

DANGER!

Risk of lethal electric shock as a result of incorrect working on electrical devices.

- All work on electrical devices must only be carried out by a qualified electrical technicians.

Use the provided 2-pole plug for connection.

5.3.1 DC

DC-source requirements

- Output voltage: typically 12 - 24 V DC ±20 %
- Output power: min. 1 W
- Maximum cable length: 10 m

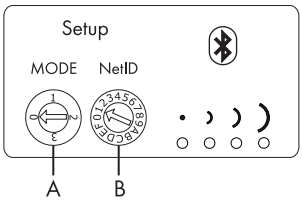
5.3.2 AC

AC-source requirements

- Output voltage Ueff: 12 - 24 V AC eff ±10 %
- Output power: min. 1 W (plug-in power supply: min. 1.2 W)
- Maximum cable length: 10 m

6 Settings

Overview of the rotary switch



A	"MODE" rotary switch
B	"NetID" rotary switch

6.1 Setting the mode

The "MODE" rotary switch serves for the setting of various modes. The rotary switch must always be set to "0" position (preset ex works). Other positions are not permitted and are intended for the SMA Service only.

1. Use a screwdriver (2.5 mm) to screw the arrow of the rotary switch "MODE" to position "0".

☑ The mode is set.

6.2 Setting the NetID

1. Turn the arrow of the "NetID" rotary switch to the desired position using a screwdriver (2.5 mm). For a layout of the switch positions, see table.

☑ The NetID is set.

Layout of the switch positions	
NetID	**Function**
0	*Bluetooth* is switched off The last three *Bluetooth* LEDs are blinking (yellow).
1 (Condition upon delivery)	*Bluetooth* is switched on. The SMA *Bluetooth* Repeater can connect only with at most 2 computers with Sunny Explorer from SMA Solar Technology. A connection to the Sunny Beam with *Bluetooth* is not possible. The last three *Bluetooth* LEDs are blinking (yellow).
2 - F	*Bluetooth* is switched on. The SMA *Bluetooth* Repeater can connect with all SMA *Bluetooth* devices with the same NetID.

6.2.1 Switching *Bluetooth* off

If you would like to switch *Bluetooth* off for test purposes, proceed as follows:

1. Turn the arrow of the "NetID" rotary switch to position "0" using a screwdriver (2.5 mm).

☑ The last three *Bluetooth* LEDs are blinking (yellow). *Bluetooth* is switched off on this device.

7 Maintenance and Care

7.1 Maintenance

Conduct regular visual inspections of the SMA *Bluetooth* Repeater to check for visible external damage or dirt.

7.2 Care

ATTENTION!

Damage to the device due to penetration of liquids.

The SMA *Bluetooth* Repeater is not waterproof, liquids should not be allowed to penetrate.

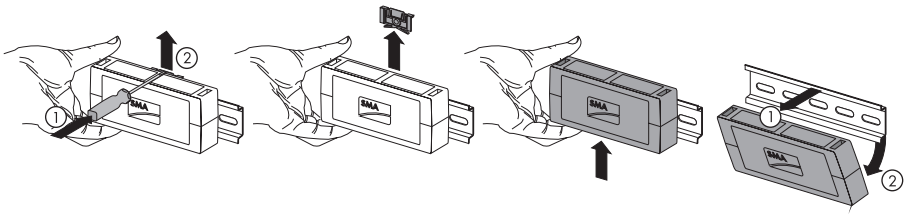
- To clean the device, use only a lightly dampened cloth so as to prevent the penetration of liquids. If there is a considerable amount of dirt, you can also use a mild, non-abrasive and non-corrosive cleaning agent.

8 Decommissioning

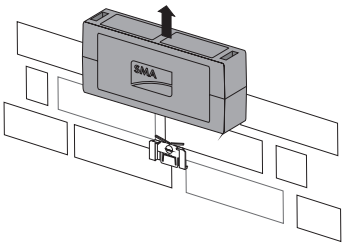
8.1 Dismantling the SMA *Bluetooth* Repeater

1. Take the SMA *Bluetooth* Repeater from the bracket, as shown in the diagram for the relevant type of mounting:

Detaching the SMA *Bluetooth* Repeater from the DIN rail.



Detaching the SMA *Bluetooth* Repeater from the wall.



2. Removing cable connections:
   - Plug-in power supply: remove the plug for power supply from the SMA *Bluetooth* Repeater and remove the power plug from the wall plug.
   - Other power supplies: remove the two-pole plug from the SMA *Bluetooth* Repeater and remove the cable connection to the device connected, as described in the relevant manual.

☑ The SMA *Bluetooth* Repeater is disconnected.

8.2 Packing the SMA *Bluetooth* Repeater

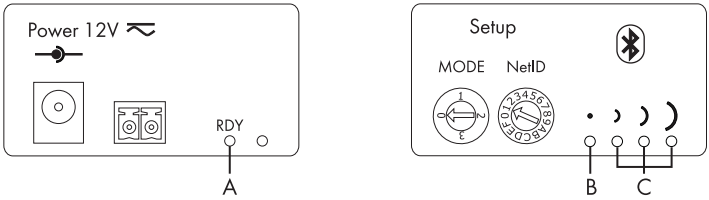
For reshipment, use a transport-secure packaging - if possible the original packaging.

8.3 Disposing of the SMA *Bluetooth* Repeater

Dispose of the SMA *Bluetooth* Repeater at the end of its service life in accordance with current disposal regulations for electronic waste that apply at the installation site, or alternatively, send it back to SMA Solar Technology with shipping paid by sender and labeled "FOR DISPOSAL".

9 Troubleshooting

9.1 LED Overview



A	RDY LED (green)	Power supply status
B	*Bluetooth* LED (blue)	Connection-quality
C	*Bluetooth* LED (yellow)	

9.1.1 Power supply (RDY LED)

DANGER!

Risk of lethal electric shock as a result of incorrect working on electrical devices.

- All work on electrical devices must only be carried out by a qualified electrical technicians.

  These actions are highlighted in gray in the following table.

RDY LED (green)		
Status	**Meaning**	**Measure**
permanently on	Supply voltage is ok. The device is in operation.	none
blinking	Supply voltage is borderline. The device is in operation.	**Plug-in power supply:** Use only the plug-in power supply intended as an accessory for the SMA *Bluetooth* Repeater (12 V, min. 100 mA).
		Other power supplies: Improve power supply via one of the following points: • Shorten the cable • Choose a larger cross-section • Change to the plug-in power supply intended as an accessory for the SMA *Bluetooth* Repeater.

off	NO supply voltage available or the supply voltage is too low. The device is not in operation.	Plug-in power supply: Check whether the wall plug is supplying electricity. • Connect a functioning device to the wall plug, for example. – If the wall plug is providing electricity, then either the plug-in power supply or the SMA *Bluetooth* Repeater is defective.
		Other power supplies: Improve power supply via one of the following points: • Shorten the cable • Choose a larger cross-section • Change to the plug-in power supply intended as an accessory for the SMA *Bluetooth* Repeater.

9.1.2 Connection-quality (*Bluetooth* LEDs)

The SMA *Bluetooth* Repeater can only display the connection quality, if it is integrated into an existing *Bluetooth* network. The *Bluetooth* network is only established by master devices (communication product).

***Bluetooth* LEDs**			
Status		**Connection-quality**	**Measure**
blue LED	yellow LEDs		
● permanently on	●●● 3 LEDs on	Very good	No action necessary. If necessary, the distance of this radio link can be enlarged, as an example to place the Repeater closer to a device with poor connection. A "good" connection should, however, still exist.
	●●⊗ 2 LEDs on	Good	No action necessary.
	●⊗⊗ 1 LED on	unreliable	Change the positioning or install additional SMA *Bluetooth* Repeaters.
	⊗⊗⊗ no LEDs on	critical	
⊗ off	⊗⊗⊗ no LEDs on	none	The SMA *Bluetooth* Repeater is not connected to the *Bluetooth* network: • There is no device with the same NetID within the radio range. – Check NetID. – Change the positioning or install additional SMA *Bluetooth* Repeaters. • The *Bluetooth* network has not been established. Only masters initiate network establishment.
	✦✦✦ 3 LEDs flashing	(Special function)	The rotary switch for the "NetID" is at position "1" or "0". See section 6.2 "Setting the NetID" (page 17).

You can download additional information about SMA *Bluetooth* Wireless Technology from the download area at www.SMA.de.

10 Technical Data

Communication	
Communication interface	*Bluetooth*
Connections	
Power supply	jack plug
	2-pole plug
Max. number of devices	
Bluetooth	100
Max. communication range	
Bluetooth outdoors	up to 100 m
Power supply	
Power supply	Plug-in power supply (AC), DC-source or other AC source
input voltage	typically 12 - 24 V AC ± 10 %, 50 / 60 Hz or typically 12 - 24 V DC ± 20 %
Power consumption	typically 0.8 W / max. 1.2 W
Environmental conditions for operation	
Ambient temperature	-20 C to +65 C
Relative humidity	5 % to 95 %, non-condensing
Protection rating	IP20
Elevation	0 m to 3000 m above mean sea level (AMSL)
Ambient conditions during storage/ transport	
Ambient temperature	-40 °C to +70 °C
Relative humidity	10 % to 95 %, non-condensing
Elevation	0 m to 3000 m above mean sea level (AMSL)
General data	
Dimensions (W/H/D) in mm	142/40/76
Weight	144 g
Mounting location	indoors
Applicability	Top hat rail, wall bracket
Status display	LEDs
Features	
Warranty	5 years
Certificates and approvals	www.SMA.de

11 Accessories

11.1 Plug-in power supply

Order number: PWRSUPPLY

Order number for Australia: PWRSUPPLY/AU/KR

The plug-in power supply with country adaptors serves as power supply to the SMA *Bluetooth* Repeater via a wall plug.

12 Contact

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

- Inverter serial number and type
- Series number and firmware version of the communication device
- Series number and firmware version of the SMA *Bluetooth* Repeater

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- Operating the product whilst ignoring relevant, statutory safety regulations in the deployment location
- Ignoring safety warnings and instructions contained in all documents relevant to the product
- Operating the product under incorrect safety or protection conditions
- Altering the product or supplied software without authority
- The product malfunctions due to operating attached or neighboring devices beyond statutory limit values
- In case of unforeseen calamity or force majeure

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SMA Factory Warranty

The current guarantee conditions come enclosed with your device. These are also available online at www.SMA.de and can be downloaded or are available on paper from the usual sales channels if required.

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