BMW Wallbox Essential

Installation instructions
# BMW Wallbox Essential
## Installation instructions

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Imprint

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Violations create an obligation to pay compensation.
Information about this manual

This manual must be retained for the lifetime of the product.

Read these instructions carefully and examine the device, so that you become familiar with it before you attempt to install, operate, or maintain it. The following special messages may be displayed in this documentation or on the device, to warn of possible risks or to indicate information which clarifies or simplifies a process.

The operating instructions should be used for the operation of the Wallbox and to explain errors.

Keep these instructions safe for later use. The most current manuals can be downloaded from the Internet at https://charging.bmwgroup.com/web/wbdoc/.

Symbols used

At various points in the manual, you find instructions and warnings of possible dangers. The symbols used have the following meanings:

- **WARNING**
  Means that death or serious injury may occur if the appropriate precautions are not taken.

- **CAUTION**
  Means that material damage or slight injury may occur if the appropriate precautions are not taken.

- **ATTENTION**
  Means that material damage may occur if the appropriate precautions are not taken.

- **ESD**
  This warning draws attention to the potential consequences of contact with electrostatically sensitive components.

- **Note**
  Refers to procedures which have no danger of creating injury.

- **Note**
  Your BMW dealer will be happy to support you in finding a qualified installation partner.
NOTES

Safety instructions

Read the safety instructions carefully and examine the device, so that you become familiar with it before you attempt to install, operate, or maintain it.

⚠️ WARNING

▷ Electrical danger!
Installation, commissioning, maintenance and retrofitting of the Wallbox must be carried out by appropriately trained, qualified, and authorized electricians(1), who bear full responsibility for complying with the applicable standards and installation regulations. Please note that vehicles or national regulations may require additional overvoltage protection. Comply with the country-specific connection and installation regulations.

▷ Before commissioning, confirm that all screwed and clamped connections are tight!

▷ The connector panel must never remain unattended while it is open. Fit the connector panel cover if you leave the Wallbox unattended.

▷ Do not undertake any unauthorized conversions or modifications of the Wallbox!

▷ Repair work on the Wallbox is not permitted, and may be carried out only by the manufacturer or by a specialist qualified for the task (replacement of the Wallbox)!

▷ Do not remove any markings such as safety symbols, warnings, performance rating plates, identification plates, or cable markings!

▷ The Wallbox does not have a power switch of its own! If present, the connector plug serves as a power cut-off device. Otherwise, the line protection in the building installation serves as a power cut-off device.

▷ Ensure that the charger cable does not become mechanically damaged (kinked, trapped, or driven over) and that the contact area does not come into contact with heat sources, dirt or water.

▷ Do not insert your fingers into the plug connector.

▷ A visual inspection for damage should always be conducted before a charging process. For this, the contact area of the charging plug, in particular, should be checked for dirt and moisture, the charger cable checked for cuts or abrasions to the insulation, and the cable outlet of the Wallbox checked for firm seat.

(1) Persons who, based on their specialist training, knowledge, and experience, as well as knowledge of the applicable standards, can assess the tasks assigned to them and recognize possible dangers.
WARNING

Grounding regulations

This product must be grounded. If a malfunction or outage occurs, then grounding provides the electrical current with a path of least resistance, to reduce the risk of an electric shock. This product is equipped with a cable which has a device grounding conductor and a grounding plug. The plug must be inserted into a suitable outlet which is correctly installed and grounded in compliance with all local regulations and requirements.

WARNING – Incorrect connection of the device grounding conductor can result in electric shock. Consult a qualified electrician or service technician if you are not sure whether the product is correctly grounded. Do not make any modifications to the plug supplied with the product – if it does not fit the outlet, then have a suitable outlet installed by a qualified electrician.

ATTENTION

▷ Never clean the Wallbox using a water jet (garden hose, high-pressure cleaner, etc.)!
▷ Ensure that the Wallbox is not damaged by inappropriate handling (casing cover, internal parts, etc.).
▷ If it is raining or snowing, and the Wallbox is mounted outdoors, do not open the connector panel cover!
▷ Protect the charging plug from dirt and water when not in use with the dust cap.
▷ Risk of breaking the plastic casing!
  - Do not use countersunk screws for fastening!
  - Do not tighten the attachment screws forcefully.
  - The installation surface must be completely flat (max. 1 mm difference between contact or attachment points). The casing must not be bent.

Information for specialists who open the device:

Risk of damage! Electronic components may be destroyed by being touched!

Before working with assemblies, carry out an electrical discharge by touching a metallic, grounded object!

Failure to comply with the safety instructions may result in danger to life, injuries, and damage to the device! The manufacturer assumes no liability for claims resulting from this!
**Intended use**

The Wallbox is a charging station for indoor and outdoor use, using which electric or plug-in hybrid vehicles can be charged. It is not permitted to connect other devices, e.g., electrical tools! The Wallbox is intended to be fitted to a wall or a mounting pillar. For installation and connection of the Wallbox, the applicable national regulations must be complied with.

In all cases, the intended use of the device includes compliance with the ambient conditions for which this device was developed.

The Wallbox was developed, manufactured, tested, and documented in compliance with the applicable safety standards. Therefore, if instructions provided for the intended use and the safety instructions are complied with, under normal circumstances, no risks arise from the product in terms of material damage or the health of persons.

This device must be grounded. In the case of a fault, the ground connection reduces the risk of an electric shock. It is fitted with a connector plug with ground connection, or else optionally has a fixed connection and is connected to a protective conductor. The equipment connector plug must be inserted into the socket which is provided for the purpose and which was installed in compliance with local regulations.

The instructions in this manual must be followed precisely. Otherwise, sources of danger could be created, or safety devices could be made ineffective. Regardless of the safety instructions provided in this manual, the safety and accident prevention regulations corresponding to the individual application case must be complied with.

Because of technical or legal restrictions, not all variants/options are available in all countries.

**About this manual**

This manual and the functions described are valid for devices of the type:

- **BMW Wallbox Essential**

This manual is intended exclusively for qualified personnel. These are persons who, based on their specialist training, knowledge, and experience, as well as knowledge of the applicable standards, can assess the tasks assigned to them and recognize possible dangers.

The images and explanations in this manual are based on a typical model of the device. The model of your device may be different from this.

Please refer to the operating instructions for the device for information and instructions on operation.
Scope of delivery

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wallbox</td>
<td>1x</td>
</tr>
<tr>
<td>Installation instructions</td>
<td>1x</td>
</tr>
<tr>
<td>Operating instructions</td>
<td>1x</td>
</tr>
<tr>
<td>Drilling template</td>
<td>1x</td>
</tr>
<tr>
<td>Double membrane nipple M32 or ¾&quot; NPT (clamping range 14-21 mm)</td>
<td>1x</td>
</tr>
<tr>
<td>Double membrane nipple M16 (clamping range 7-12 mm)</td>
<td>2x</td>
</tr>
</tbody>
</table>

Attachment set for wall installation

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug for M8, Fischer UXR-10</td>
<td>4x</td>
</tr>
<tr>
<td>Wafer-head screw</td>
<td>4x</td>
</tr>
</tbody>
</table>

Guarantee

BMW Service will provide information on the currently applicable guarantee terms. However, the cases listed below are excluded from the guarantee.

▷ Defects or damage caused by installations which were not carried out as per the requirements in the BMW Wallbox Essential installation instructions.
▷ Defects or damage caused because the product was not used as per the requirements in the BMW Wallbox Essential operating instructions.
▷ Costs and damage arising from repairs which were not carried out by a BMW sales outlet or by a specialized electrician authorized by a contracted service workshop.
OPERATION

Displays and controls

Variant with charger cable

Functions:

- Charging of electric or plug-in hybrid vehicles

1 Status LED
2 Charger cable connector
General requirements for selecting a location

The Wallbox was designed for indoor and outdoor use. It is therefore necessary to make arrangements for the installation location and protection of the device.

- Take into account the locally applicable requirements for electrical installations, measures for fire prevention, and accident prevention regulations, as well as escape routes at the location.
- You must not install the Wallbox at locations:
  - Which are used as escape and emergency routes.
  - Which are located in potentially explosive zones (hazardous location).
  - In which the Wallbox will be exposed to ammonia or ammonia gases (e.g. in or adjacent to stables).
  - In which falling objects (e.g. suspended ladders or car tires) could damage the Wallbox.
  - In which the Wallbox is situated directly in pedestrian traffic and where people could trip over inserted charger cables.
  - In which direct water jets could strike the Wallbox (e.g. from adjacent car wash installations, high pressure cleaners, garden hoses).
  - In which the installation surface is of insufficient strength to withstand the mechanical loads.

- If possible, install the Wallbox protected from direct rainfall, in order to avoid weathering, icing up, damaging by hail or similar.
- If possible, install the Wallbox protected from direct sunshine, in order to prevent the reduction of the charging current or the interruption of charging because of excessive temperatures of Wallbox components.
- Comply with the permitted ambient conditions, see section **Technical data**.
- Comply with the nationally applicable installation standards, e.g. NFPA 70 and CSA C22.1, and comply with the nationally and regionally applicable installation standards and regulations, e.g. Electric Code, Building Code, Residential Code, and Fire Code.

**Note**

For an installation exposed to the weather, e.g. on an open air parking lot, this can result in an impermissible temperature excursion which reduces the charging current specification to 16 A.
Requirements for electrical connection

As delivered, the maximum charging current for the Wallbox is set to 32 A.

Pre-installed connection cable

As delivered, the Wallbox is provided with a pre-installed connection cable with a NEMA 6-50p plug which can be inserted into an appropriate socket.

The following safety measure must be installed:

- Branch circuit breaker: max. 40 A
Note

As delivered, the maximum charging current for the Wallbox is set to 32 A.

Prerequisites for installation

▷ Comply with the locally applicable installation guidelines.
▷ The electrical connection (NEMA 6-50p socket) must be prepared.
▷ Acclimatization: If the temperature difference between transportation and installation location is greater than 15 °C, then the Wallbox should be allowed to acclimatize for at least two hours without being opened.

Under some circumstances, damage from condensate water may not arise until at some point after the installation.

Ideally, the Wallbox should be left at the installation location for a few hours in advance. If this is not possible, then the Wallbox should not be stored overnight in the open air or in a vehicle at low temperatures (< 5 °C).

List of tools

The following tools are needed for the installation:

▷ Torx screwdriver T40

Recommended installation positions

When selecting the installation position, please take into account the position of the charging connection on your vehicle and the usual direction of parking. Examples:
**Necessary installation space**

The installation space specified below (hatched area) ensures convenient installation and operation of the Wallbox. If several Wallboxes are installed next to each other, then a separation of at least 200 mm (8") must be maintained between the Wallboxes.

![Diagram](image)

**Note**

The installation height must be complied with, to fulfill the requirements for indoor and outdoor use.

Dimensions in millimeters (inches)
Removing the casing cover

1. On the underside of the Wallbox, push the two locking mechanisms 1 of the casing cover upwards. The casing cover should spring outwards a little at the bottom.

2. On the underside, swing the casing cover forwards a little 2.

3. Now unhook the casing cover upwards 3.

Note
To avoid scratches or other damage, store the casing cover in its packaging.
Removing the connector panel cover

1. Release the four screws with which the connector panel cover 1 is mounted.

ESD
Risk of damage! Electronic components may be destroyed by being touched!

Before working with assemblies, carry out an electrical discharge by touching a metallic, grounded object!

2. Remove the connector panel cover. The connector panel 2 is now accessible.
3. Remove the desiccant bag from the connector panel and dispose of it correctly.

WARNING
The cover of connection area 3 for the line voltage may be removed only by a trained electrician.
Installing the Wallbox

The attachment material supplied is suitable for concrete, tiling, and wood (without the use of plugs). If the substructure is not one of the above, then a suitable type of attachment must be selected.

Note

If the substructure is not one of the above, then the attachment materials must be provided by the customer. It is essential that the device is fitted correctly, and this is outside the responsibility of the device manufacturer.

Installation preparations

Drilled holes

Note

Comply with the installation height. Upper edge of the drilling template = 1500 - 1700 mm.

1. Mark the locations for the four drilled holes 1 to 4 using the provided drilling template and a spirit level.
2. Drill the attachment holes.
3. Insert the plugs.

Top attachment screws

1. Screw in the two top wafer-head screws until the remaining distance from the wall is ≥ 20 mm.

1 Wall
2 Plug
3 Drilled hole
4 Wafer-head screw
Installation on cavity walls

For installation on cavity walls, at least two attachment screws, e.g. 1 and 2, must be attached to one of the wall’s supporting elements. For the other attachment screws, special cavity wall plugs must be used.

**Note**
When installing on a cavity wall, you must ensure specifically that the structure has sufficient load-bearing capacity.

Attaching the Wallbox

1. After introducing the cabling, hang the Wallbox from the two top wafer-head screws 1 and 2.

**Note**
Ensure that the supply line is correctly laid on the reverse side, and that it is not trapped.

2. Tighten wafer-head screws 1 and 2.
3. Then attach the Wallbox using the two lower wafer-head screws 3 and 4.
4. For safe storage, wind the charger cable around the Wallbox, see operating instructions.
Connecting the supply line

As supplied, the Wallbox is equipped with a pre-installed connection cable (1).

This can be connected into an appropriate socket, using a NEMA 6-50p plug.

If required, the supply line can also be converted by a specialist into a permanent connection to an existing domestic installation, but the nationally applicable regulations must be complied with.
ELECTRICS

Connection overview (with open connector panel cover)

**DSW1** DIP switch for configuration  
**DSW2** DIP switch  
**T1** Service button  
**LED** Status LED (internal)

**X3** Diagnostics connection, RJ45  
**X4** Ethernet1 connection, LSA+ terminals  
**X5** USB connection  
**Shd** Shield connection for Ethernet1 connection terminals

**ATTENTION**

The X3 diagnostic connection is suitable only for error analysis and must not be used to connect the device to a network.

**Note**

The connection overview shows all options of the device, but the legend only lists the available options. If necessary, not all connections are available for your device variant.
DIP switch settings

Note
Changes to the DIP switch settings take effect only after a restart of the Wallbox! To do this, press the Service button until the 1st signal tone is heard (approx. 2 seconds). Alternatively, you can also switch the supply voltage off and on again. 

Note
Switches which are not described here must be left in the OFF position.

DIP switches
The DIP switches are used for addressing and configuring the Wallbox and are located underneath the connector panel cover.

DSW1: Configuration, DIP switch, upper
DSW2: Addressing, DIP switch, lower

DIP switch - example
For a more detailed explanation, the illustration shows the position of the DIP switches for the ON and OFF states.
Maximum charging current (DSW1)

The following DIP switches can be used to set a maximum value for the charging current. This maximum value applies to each connected phase individually and not as a sum value for all phases together. The current specification is transmitted to the vehicle (Control Pilot Duty Cycle). It is only possible to set a maximum value, which is less than or equal to the operating current defined on the type plate.

<table>
<thead>
<tr>
<th>Current</th>
<th>DIP switch</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DSW1.6</td>
<td></td>
</tr>
<tr>
<td>0 A</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>10 A</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>13 A</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>16 A</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>20 A</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>25 A</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>32 A</td>
<td>ON</td>
<td></td>
</tr>
</tbody>
</table>
COMMISSIONING

General commissioning process

▷ Switch on the supply voltage. 15-20 seconds after the self-test, the status LED (LED strip) must light up blue.
▷ Carry out the prescribed initial testing as per locally applicable guidelines and laws.
▷ Install the casing cover, see section Installing the casing cover.

Installing the connector panel cover

Note

Confirm that a current version of the software is available before you install the connector panel cover. For further information, see section SOFTWARE UPDATE.

Note

The Wallbox must not be used permanently if this cover is absent or damaged. Alternative covers are not permitted.

Attachment bolts

1. Replace the connector panel cover 1.
2. Attach the connector panel cover again using the four bolts.
Casing marking

1. Tighten the four bolts until the casing markings at right and left on the connector panel cover close flush with the casing.

2. The connector panel cover must be correctly sealed by the casing.

For self-tapping bolts, an increased torque application is required: 2.58 ft-lb.
Installing the casing cover

Note
This cover is not essential for the safe operation of the Wallbox.

Attaching the casing cover
1. Attach the casing cover at the top, and ensure that the hooks of the casing cover are correctly inserted 1.
2. Press the cover downwards, and then tilt the casing cover 2 towards the back. The casing cover must slide into the lower guides with very little resistance.

ATTENTION
Ensure that the casing cover sits correctly in the casing guide on all sides. Only a small uniform gap should be present.

Locking mechanisms
1. Press the lower part of the casing cover onto the Wallbox until the locking mechanisms 1 engage fully.
Dimensions

Dimensions in millimeters
## Technical data

### Electrical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable feed:</td>
<td>Surface or flush-mounted</td>
</tr>
<tr>
<td>Connection cross-section:</td>
<td>As per the branch circuit breaker</td>
</tr>
<tr>
<td>Supply terminals:</td>
<td>Connection line:</td>
</tr>
<tr>
<td></td>
<td>- AWG (min.-max.): 24 – 6</td>
</tr>
<tr>
<td>Temperature rating for supply terminals:</td>
<td>105 °C (221 °F)</td>
</tr>
<tr>
<td>Rated current (configurable connection values):</td>
<td>10 A, 13 A, 16 A, 20 A, 25 A or 32 A</td>
</tr>
<tr>
<td></td>
<td>1-phase (3 lines)</td>
</tr>
<tr>
<td>Mains voltage:</td>
<td>120/240 V or 120/208 V Y or 127/220 V c.a.</td>
</tr>
<tr>
<td>Mains frequency:</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Overvoltage category:</td>
<td>III in accordance with UL 840</td>
</tr>
<tr>
<td>Branch circuit breaker (control cabinet):</td>
<td>Max. 40 A</td>
</tr>
<tr>
<td>Fault current monitoring:</td>
<td>CCID20</td>
</tr>
<tr>
<td>Ventilation during charging:</td>
<td>Not supported</td>
</tr>
<tr>
<td>Protection class:</td>
<td>I</td>
</tr>
<tr>
<td>IP protection class for device/type rating:</td>
<td>IP54/Type 3R</td>
</tr>
<tr>
<td>Protection against mechanical impact:</td>
<td>IK08</td>
</tr>
</tbody>
</table>

### Mechanical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W x H x D):</td>
<td>366 x 455 x 202 mm (excluding plug)</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 8 kg (depending on variant)</td>
</tr>
<tr>
<td>Installation (stationary):</td>
<td>On the wall or mounting pillar</td>
</tr>
</tbody>
</table>
## Ambient conditions

<table>
<thead>
<tr>
<th>Usage:</th>
<th>Indoor and outdoor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature range</td>
<td>-30 °C to +50 °C (-22 °F to 122 °F) without direct sunlight</td>
</tr>
<tr>
<td>Temperature behavior:</td>
<td>This is not a safety device, merely an operating function. The specified operating temperature range must be complied with. Within the specified operating temperature ranges, the device provides the charging current continuously. To increase the charging availability, the charging current specification is reduced to 16 A in the event of prohibited exceeding of temperature. A further consequence may be the shut-off of the charging process. After cooling, the charging process is continued, and the charging current specification is increased again.</td>
</tr>
<tr>
<td>Temperature range for storage:</td>
<td>-30 °C to +80 °C (-22 °F to 176 °F)</td>
</tr>
<tr>
<td>Rate of temperature change:</td>
<td>max. 0.5 °C/min (max. 32.9 °F/min)</td>
</tr>
<tr>
<td>Permissible relative air humidity:</td>
<td>5 % to 95 % non-condensing</td>
</tr>
<tr>
<td>Altitude:</td>
<td>max. 2000 m above sea level</td>
</tr>
</tbody>
</table>

## Standards and guidelines

### National regulations (USA)

| FCC Title 47, Part 15 | Digital Device Class B |
| NEC Article 625 | Electric vehicle charging systems |

### National regulations (Canada)

<p>| CE Code CSA C22.1 No. 280 | Electric Vehicle Supply Equipment |
| ICES-003 | Class B |</p>
<table>
<thead>
<tr>
<th>Recognized standards</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UL 2594</td>
<td>Electric vehicle supply equipment</td>
</tr>
<tr>
<td>CSA C22.2 No. 280</td>
<td></td>
</tr>
<tr>
<td>NMX-J-677-ANCE</td>
<td></td>
</tr>
<tr>
<td>UL 2231-1</td>
<td>Personnel protection systems for electric vehicle (EV)</td>
</tr>
<tr>
<td>CSA C22.2 No. 281.1</td>
<td>Supply circuits: General requirements</td>
</tr>
<tr>
<td>NMX-J-668/1-ANCE</td>
<td></td>
</tr>
<tr>
<td>UL 2231-2</td>
<td>Personnel protection systems for electric vehicle (EV)</td>
</tr>
<tr>
<td>CSA C22.2 No. 281.2</td>
<td>Supply circuits: Particular requirements for protection devices for use in charging systems</td>
</tr>
<tr>
<td>NMX-J-668/2-ANCE</td>
<td></td>
</tr>
<tr>
<td>UL 991</td>
<td>Tests for Safety-related controls employing solid-state devices</td>
</tr>
<tr>
<td>UL 1998</td>
<td>Software in programmable components</td>
</tr>
<tr>
<td>UL 61010</td>
<td>Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements</td>
</tr>
<tr>
<td>CSA C22.2 No. 107.1</td>
<td></td>
</tr>
</tbody>
</table>
After correctly decommissioning the device, have the device disposed of by Service or else in compliance with all currently applicable disposal regulations.

**Disposal information**

The symbol of the "crossed-out" waste bin means that electrical and electronic devices, including accessories, must be disposed of separately from general household garbage. Instructions are to be found on the product, in the instructions for use, or on the packaging.

The materials can be recycled according to their designation. Through re-use, material recycling, or other forms of recycling old equipment, you will be making an important contribution to the protection of our environment.
SOFTWARE UPDATE

The software for the Wallbox can be updated via the USB connection inside the device. For access to the USB connection, the casing cover and the connector panel cover must be removed.

Follow the details in the instructions for updating the software.

The latest software and the corresponding instructions can be downloaded from the Internet at https://charging.bmwgroup.com/web/wbdoc/. A new software version may, for example, take into account modified standards, or improve the compatibility with new electric or plug-in hybrid vehicles.
This product is UL-certified. It complies with the applicable UL, CSA, and ANCE standards for North America, Canada, and Mexico. Further information under https://charging.bmwgroup.com/web/wbdoc/.

**FCC INFORMATION**
This device complies with part 15 of the FCC regulations. Its operation is subject to the following two conditions:
(1) This device must cause no hazardous interference, and
(2) This device must withstand all interference received, including interference that causes unintended operation.

**ATTENTION:**
Changes or modifications which were not expressly approved by the responsible authority may impede the right to use the device.

**NOTE:**
This device has been tested, and it complies with the limits for a digital device of class B as per part 15 of the FCC regulations. This limit is intended to provide appropriate protection against harmful interference in a residential situation. This device generates and uses high-frequency energy, and if it is not installed in compliance with the instructions, it can result in interference to radio communication. However, there is no guarantee that there will be no interference in a specific installation. If this device causes interference to radio or television reception (this can be determined by switching the device off and on), then the user should attempt to prevent the interference through one or more of the following measures:
- Align the reception antenna differently.
- Increase the distance between device and receiver.
- Connect the devices to a different power circuit than the one to which the receiver is connected.
- Request assistance from the dealer or an experienced radio/television technician.

**CANADA**
This digital device of class B complies with the Canadian ICES-003.
This product is NOM-certified.

MEXICO

Its operation is subject to the following two conditions: (1) This device must cause no hazardous interference, and (2) This device must withstand all external interference received, regardless of the source of the interference.
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