Always Connected. Always Covered.

On/Off Plug-In Switch

DMOF1

User Manual

Preface

As this is the full User Manual, a working knowledge of Z-Wave automation terminology and concepts will be assumed. If you are a basic user, please visit www.domeha.com for instructions. This manual will provide in-depth technical information about the On/Off Plug-In Switch, especially in regards to its compliance to the Z-Wave standard (such as compatible Command Classes, Association Group capabilities, special features, and other information) that will help you maximize the utility of this product in your system.

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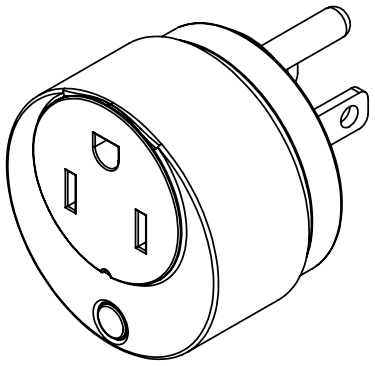
Description & Features



The Dome On/Off Plug-In Switch is a Z-Wave Plus device that plugs into a standard 3-prong power outlet and lets you turn on or off any connected electronic device. The On/Off Plug-In Switch also monitors how much energy the attached device uses, and reports the data to your Z-Wave Hub.

Key Features:

- Z-Wave Plus Certified
- Turns on or off any plugged-in device
- Extends the range of your Z-Wave system
- Up to 150' wireless range, depending on environment
- Small size - won't block the adjacent outlet!
- Fits any standard 3-prong American power outlet
- Reports energy consumption data
- Overload protection
- Max current - 13 A

*Event-based response requires use of external sensors and compatible controller

Specifications

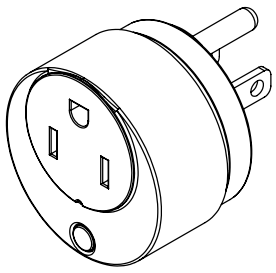
Technical Specifications

Radio protocol	Z-Wave Plus (500 series)
Power supply	110-230V AC 50/60Hz
Max Current	13A
Power Consumption	0.13W
Radio frequency	908.4 MHz US
Z-Wave Range	Up to 150’ depending on environment
Dimensions (L x W x H)	1.8” x 1.8” x 1.8”

Table 1 - Technical Specifications

Package Contents:

USER MANUAL



On/Off Plug-In Switch

Physical Characteristics

The names used in Figures 1 & 2 will be used throughout this manual. Please refer to this page as needed.

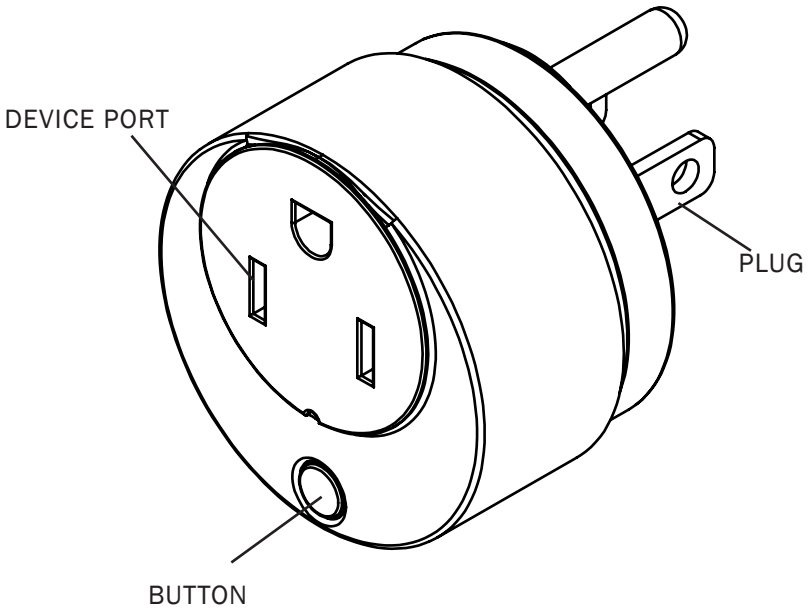


Figure 1 - On/Off Plug-In Switch Parts

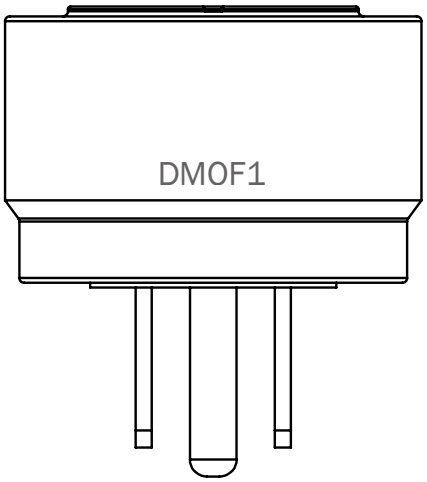


Figure 2 - Bottom View

Inclusion & Exclusion

Inclusion

Follow the instructions for your Z-Wave Certified Conto enter inclusion mode. When prompted by the controller:

1. Plug the On/Off Plug-In Switch into an outlet 10’ from your controller. You can bring it to your desired location after the inclusion process.
2. When prompted by the controller, quickly press the BUTTON 3 times.
3. A yellow LED will flash five times indicating inclusion.

Exclusion

Follow the instructions for your Z-Wave Certified Conto enter exclusion mode. When prompted by the controller:

1. Plug the On/Off Plug-In Switch into an outlet 10’ from your controller.
2. Press the BUTTON quickly 3 times in a row.
3. A yellow LED will flash five times indicating exclusion/disconnection.

Factory Reset & Misc. Functions

Resetting the On/Off Plug-In Switch

If needed, the On/Off Plug-In Switch can be reset locally by following these steps. Only do this when your Z-Wave controller is disconnected or otherwise unreachable. Beware that resetting your device will disconnect it from the system:

1. Confirm that your On/Off Plug-In Switch is powered up.
2. Press and hold the BUTTON for at least 10 seconds then release. The LED will blink once in a red color followed by 5 times in a pink color indicating a successful factory reset.
3. The On/Off Plug-In Switch's memory will be erased to factory settings.

Physical Installation

The On/Off Plug-In Switch can be installed in any standard 3-prong American power outlet. To control or monitor an electronic device, simply plug it into the DEVICE PORT. Make sure there is sufficient Z-Wave coverage in your desired installation location.

LED Behavior

Color	Behavior	This happens when...
Pink	Blink 5 times in 1 second	...the device powers on, but is not yet included in a Z-Wave Network.
	Blink 5 times in 500ms	...the BUTTON is pushed 3 times after the On/Off Plug-In Switch is already in a Z-Wave network, and the device sends a notification with its Node Info.
Blue	Blink 5 times in 300ms	...the device powers on, and is arleady included in a Z-wave network.
Yellow	Blink 5 times in 500ms	...the BUTTON is pushed three times, including the On/Off Plug-In Switch into a Z-Wave network.
	Always On	...the current is above the limit set in Param 4 (12A by default.)
Red	Blink Once	...the BUTTON is pressed for an extended period of time, resetting the On/Off Plug-In Switch to factory default settings.
	Blink Once a Second	...the current is above the limit set in Param 3 (13A by default.) Power will be shut off; LED and power will return to normal when the current drops below the level set in Param 3 and the BUTTON is pushed once.
Green	Always On	...the On/Off Plug-In Switch is powered on.

Table 2 - LED Blinking Behavior

Button Behavior

Action	Condition	Result
Push Button Once	Param 10 = 1	Turn Device on or off
	Param 10 = 0	Nothing
Push BUTTON 3 Times	On/Off Plug-In Switch Already Included in System	Device sends node info to Group 1
	On/Off Plug-In Switch Already Included in System and Controller is in Exclusion Mode	Device is excluded from the z-Wave Network
	On/Off Plug Not Yet Included in System	Device enters inclusion mode
Press and Hold for 10+ seconds	All conditions	Device will be reset to factory settings, and a DEVICE_RESET_LOCALLY command will be sent to Node 1

Table 3 - Button Behavior

Compatible Command Classes

Command Class	Notes
Device Reset Locally V1 (5A)	-
Powerlevel V1 (73)	-
Association Group Information V1 (59)	-
Binary Switch V1 (25)	-
All Switch V1 (27)	-
Basic V1 (20)	-
Z-Wave Plus Info V2 (5E)	**Returned Value:** 01 05 00 07 00 07 00 **Z-Wave Plus Version:** 01 **Role Type**: 05 *(Slave—Always On)* **Node Type**: 00 *(Z-Wave Plus Node)* **Installer Icon Type**: 07 00 *(Generic Relay Device)* **User Icon Type**: 07 00 *(Generic Relay Device)*
Version V2 (86)	**Returned Value:** 03 04 05 03 46 41 00 **Z-Wave Library Type:** 03 *(Enhanced Slave)* **Protocol Version**: 04 05 **Protocol Sub-Version**: 03 46 **Application Version**: 41 **Application Sub-Version**: 00
Manufacturer Specific V2 (72)	**Returned Value:** 02 1F 03 01 03 **Manufacturer ID:** 02 1F **Product Type**: 03 **Product ID**: 00 87

Table 4 - Command Classes

Command Class	Notes
Association V2 (85)	**Group 1** Group 1 is the “Lifeline” group, which can hold five devices. The On/Off Plug-In Switch sends this group a Notification Report and Binary Switch Report whenever it is turned on or off. It also sends a Meter Report incrementally based on time (see Param 2,) or when a relative change in power usage is detected (see Param 6.) Finally, the On/Off Plug-In Switch sends this group a Device Reset Locally notification to remove itself from the Z-Wave network. **Group 2** The On/Off Plug-In Switch sends a BASIC_SET(FF) command to Association Group 2 to directly trigger devices (like a siren, chime, etc.) when the current passes above the level set in Parameter 3. When the current drops below the level again, a BASIC_SET(00) command is sent to reset the device (e.g. turn off the siren.) This Group can hold five devices. **Group 3** The On/Off Plug-In Switch sends Notification Reports to Group 3, and it can hold five devices.
Notification V4 (71)	The On/Off Plug-In Switch sends a NOTIFICATION_REPORT to Group 1 when the current load passes the level set in Param 3, and another report when it drops back below this level. See below for the NOTIFICATION_REPORT parameters sent: **Returned Value:** 00 00 00 FF 08 XX 00 00 **V1 Alarm Type**: 00 *(Unsupported)* **V1 Alarm Level**: 00 *(Unsupported)* **Reserved**: 00 *(Reserved)* **Notification Status:** FF *(Unsolicited Reporting is Enabled)* **Notification Type**: 08 *(Power Management)* **Event**: **Overload Detected**—08 *(Overload Detected)* **No More Overload**—00 *(Event Inactive)* **Sequence/Reserved/Event Parameters Length:** 00 **Notification Event Parameters**: 00 *(No Event Parameters)*

Table 5 - Command Classes Continued

Command Class	Notes
Meter V4 (32)	When enabled (see Param 1,) the On/Off Plug-In Switch sends period updates with various usage information to Group 1 using the Meter Command Class. These reports are sent periodically (every 300s by default - see Param 2) as well as when a change in current is detected (see Param 6.) **Voltage**—The voltage currently being supplied by the plug (in V) **Current**—The current being supplied by the plug (in A) **Power**—The power supplied by the plug instantaneously (in W) **Energy**—The amount of energy supplied per unit time (in kWh) **Returned Value:** 21 44 XX XX XX XX YY YY ZZ ZZ ZZ ZZ 00 **Scale/Rate Type/Meter Type/Size/Precision**: 21 44 *(0010 0001 0100 0100)* **Scale (2)**—0 **Rate Type**—01 *(Import [Consumed])* **Meter Type**—0 0001 *(Electric Meter)* **Precision**—010 *(2 decimal places)* **Scale (1:0)**—0 0 **Size**—100 *(4 Bytes)* **Scale (Summed)**—0 0 0 *(Kilowatt-Hours)* **Meter Value**: 80 00 00 00 ~ 7F FF FF FF *(-2,147,483,648 ~ 2,147,483,647 in kWh)* **Delta Time**: 00 00 ~ FF FF *(0 ~ 65,535 in seconds)* **Previous Value**: 80 00 00 00 ~ 7F FF FF FF *(-2,147,483,648 ~ 2,147,483,647 in kWh)* **Scale 2**: 00 **Returned Value:** 21 54 XX XX XX XX YY YY ZZ ZZ ZZ ZZ 00 **Scale/Rate Type/Meter Type/Size/Precision**: 21 54 *(0010 0001 0101 0100)* **Scale (2)**—0 **Rate Type**—01 *(Import [Consumed])* **Meter Type**—0 0001 *(Electric Meter)* **Precision**—010 *(2 decimal places)* **Scale (1:0)**—1 0 **Size**—100 *(4 Bytes)* **Scale (Summed)**—0 1 0 *(Watts)* **Meter Value**: 80 00 00 00 ~ 7F FF FF FF *(-2,147,483,648 ~ 2,147,483,647 in kWh)* **Delta Time**: 00 00 ~ FF FF *(0 ~ 65,535 in seconds)* **Previous Value**: 80 00 00 00 ~ 7F FF FF FF *(-2,147,483,648 ~ 2,147,483,647 in kWh)* **Scale 2**: 00

Table 6 - Command Classes Continued

Command Class	Notes
Meter V4 (32)	**Returned Value:** A1 42 XX XX YY YY ZZ ZZ 00 **Scale/Rate Type/Meter Type/Size/Precision**: A1 42 *(1010 0001 0100 0010)* **Scale (2)**—1 **Rate Type**—01 *(Import [Consumed])* **Meter Type**—0 0001 *(Electric Meter)* **Precision**—010 *(2 decimal places)* **Scale (1:0)**—0 0 **Size**—010 *(2 Bytes)* **Scale (Summed)**—1 0 0 *(Volts)* **Meter Value**: 80 00 ~ 7F FF *(-32,768 ~ 32,767 in V)* **Delta Time**: 00 00 ~ FF FF *(0 ~ 65,535 in seconds)* **Previous Value**: 80 00 ~ 7F FF *(-32,768 ~ 32,767 in V)* **Scale 2**: 00 **Returned Value:** A1 4A XX XX YY YY ZZ ZZ 00 **Scale/Rate Type/Meter Type/Size/Precision**: A1 4A *(1010 0001 0100 1010)* **Scale (2)**—1 **Rate Type**—01 *(Import [Consumed])* **Meter Type**—0 0001 *(Electric Meter)* **Precision**—010 *(2 decimal places)* **Scale (1:0)**—0 1 **Size**—010 *(2 Bytes)* **Scale (Summed)**—1 0 1 *(Amperes)* **Meter Value**: 80 00 ~ 7F FF *(-32,768 ~ 32,767 in A)* **Delta Time**: 00 00 ~ FF FF *(0 ~ 65,535 in seconds)* **Previous Value**: 80 00 ~ 7F FF *(-32,768 ~ 32,767 in A)* **Scale 2**: 00
Configuration V1 (70)	See ““Configuration” Command Class Parameters” on page 16.

Table 7 - Command Classes Continued

“Configuration” Command Class Parameters

Configuration parameters are sent using a standard syntax to ensure interoperability between all manufacturers’ products. All values are represented using the hexadecimal number system.

Typical syntax is as shown below. Note that the value sent must be the exact size, in bytes, as accepted by the setting. The “extra” spaces should be filled with zeros (see the “value” column below.)

Example Configuration Parameter: **02 02 00 0A**

Param #	Size	Value
02 *(Param #2)*	02 *(2 Bytes)*	00 0A *(10)*

Param #	Size	Name	Available Values	Default Value
01	This parameter enables/disables the METER_REPORT function, which sends periodic reports to Group1 members with information on line voltage, current load, and power & energy consumption. Also see Param 2 & 6.			
	01	Enable/Disable METER_REPORT	00 *(Disable Meter Functionality)* 01 *(Enable Meter Functionality)*	01 *(Meter Enabled)*
02	This parameter sets the amount of time between each successive METER_REPORT signal sent to Group 1 (also see Param 1 & 6.)			
	02	METER_REPORT Interval	00 01 ~ FF FF *(1 ~ 65535 in seconds)*	01 2C *(300 Sec)*
03	Sets the maximum current the plug will pass before it cuts off power and sends a NOTIFICATION_EVENT_POWER_MANAGEMENT_OVER_LOAD_DETECTED signal to Group 1 and a BASIC_SET(FF) to Group 2. The LED will then blink red once per second until the current returns to normal. To clear the NOTIFICATION and start monitoring again, the BUTTON must be pushed once (only after the current is back to normal.) **NOTE: this value must be higher than Param 4**			
	01	Set “Overload” Current Level	01 ~ 10 *(1 ~ 16 in amps)*	0D *(13 Amps)*

Table 8 - On/Off Plug-In Switch Configuration Parameters

Param #	Size	Name	Available Settings	Default Setting
04	Sets the current level at which the On/Off Plug-In Switch will flash its LED yellow, until the current returns to below this level. It will NOT cut off current to the device; this functions as a visible warning to the user. **NOTE: this value must be lower than Param 3**			
	01	Set "Alert" Current Level	01 ~ Param(3) *(In amps)*	0C *12 Amps*
05	This parameter enables or disables the indicator LED.			
	01	Enable/Disable Indicator LED	00 *(Disable LED)* 01 *(Enable LED)*	01 *(LED Enabled)*
06	In addition to sending a METER_REPORT to Group 1 in the time interval set by Param 2, the On/Off Plug-In Switch also sends a METER_REPORT when it detects a relative change in current flow. This parameter sets this minimum current change amount, in percent, at which point the On/Off Plug-In Switch will send a METER_REPORT to Group 1. Also see Param 1 & 2.			
	01	Current change METER_REPORT level	01 ~ 64 *(1~100 in % change in amps)*	05 *(5%)*
07	This parameter sets whether or not the On/Off Plug-In Switch will remember if it was turned on or off when it was last plugged in. If enabled, whenever the device is rebooted (plugged in and out of the main outlet,) it will resume its state from before the reboot. If disabled, it will turn on everytime the device is rebooted.			
	01	Remember On/Off Status	00 *(Don't Remember On/Off Status)* 01 *(Remember On/Off Status)*	01 *(Remember Status)*
08	If this parameter is enabled, whenever the On/Off Plug-In Switch is turned on, it will automatically turn off after a set amount of time (set in Param 9.)			
	01	Enable/Disable Timer Function	00 *(Disable Timer Functionality)* 01 *(Enable Timer Functionality)*	00 *(Timer Disabled)*

Table 9 - On/Off Plug-In Switch Configuration Parameters, cont'd

Param #	Size	Name	Available Settings	Default Setting
09	Sets the time interval before the On/Off Plug-In Switch automatically shuts off. See Param 8.			
	02	Set Timer Time Interval	00 01 ~ FF FF *(1 ~ 65535 in Minutes)*	00 96 *(150 min)*
0A	If this parameter is enabled, the user can turn the device on or off using the BUTTON.			
	01	Enable/Disable BUTTON	00 *(Disable Button)* 01 *(Enable Button)*	01 *(Button Enabled)*

Table 10 - On/Off Plug-In Switch Configuration Parameters, cont'd

Troubleshooting

Q: Help! My On/Off Plug-In Switch paired successfully, but my controller can't see it anymore after I installed it!

A: The Z-Wave signal is probably weak in that area of your home. Remember that the 120' - 150' range doesn't take into account walls, furniture, and other obstacles. To boost your Z-Wave network coverage, add a few non-battery powered Z-Wave devices between the controller and the furthest device, like the Dome On/Off Plug or Water Main Shut-Off. You can even purchase dedicated Z-Wave extenders from 3rd party manufacturers.

Q: There's so many words in this manual I don't understand. How can I learn more about Z-Wave?

A: Remember you don't have to understand everything in this manual to start automating your home. Our Quick-Start Guides have all you need to start using any device. For more thorough information about Z-Wave home automation, visit www.domeha.com/support.

Q: I've tried multiple times, but I can't include the On/Off Plug-In Switch in my system.

A: Make sure your device is getting power. Then, follow the procedure to Factory Reset on Page 8 and try going through the inclusion process again. If you are still having issues, please visit www.domeha.com/support

Q: All of a sudden, my On/Off Plug-In Switch is offline.

A: Make sure your device is getting power. If powered, make sure you still have Z-Wave network coverage. If you are still having issues, visit www.domeha.com/support.

Q: A red LED is blinking and my device turned off by itself.

A: There was too much current flowing through the On/Off Plug-In Switch and it was shut off as a precautionary measure. After you make sure the current is back to normal, just push the BUTTON once and your device should start working like before.

Warranty & Support

If you have questions, our trained Customer Service Department is happy to assist you 24 hours a day, 7 days a week. Contact Dome Customer Service as follows: • In North America dial: 1-855-249-1754 • Email Dome at support@domeHA.com
DO NOT RETURN THIS PRODUCT TO THE STORE OR WEBSITE FROM WHICH IT WAS PURCHASED
If you believe the product is defective, has a missing or broken part or are having difficulty with it please contact Dome as listed above for a quick and efficient solution to the problem.
Legal Notices: This device complies with part 15 of the FCC rules. Operation is subject to the following two 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.
This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Elexa Consumer Products, Inc. (”ECP”) warrants to the original retail purchaser (”Purchaser”) that the DOME Window/Door sensor (the “Product”) will be free of defects in materials or workmanship under use for one (1) year from the date of purchase (the “Warranty period”).
For the Purchaser only, if the Product fails to perform as specified during the Warranty Period due to defective parts or faulty workmanship, ECP will repair or replace the defective or damaged parts of the Product. Normal wear and tear is not covered nor is abnormal use, misuse, mishandling, faulty installation, improper shipping, damage caused by disasters such as fire, flood or earthquake, neglect, accident or tampering. This warranty covers only normal use in the United States or Canada.

To obtain warranty service during the Warranty Period, call Dome Customer Service (1-855-249-1754) or email: support@domeHA.com for instructions on sending damaged parts and documentation for a Return Material Authorization (RMA). Products returned to ECP for repair or replacement without authorization will be returned at the sender’s expense. All warranty claims must be accompanied by a legible copy of the original receipt showing date and details of purchase. The RMA number must be clearly written on the side of the shipping container in which you return the Product or defective parts. Unless otherwise instructed by ECP, the Product must be sent freight prepaid to the following address:

Elexa Consumer Products, c/o Promac,
1153 Timber Dr., Elgin, IL 60123

ECP will repair or replace the defective parts and return them at ECP’s cost by a shipping method selected by ECP. When contacting ECP to obtain an RMA, Purchaser may request expedited return shipping at Purchaser’s expense.
THIS WARRANTY IS NOT TRANSFERABLE, AND, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW IS IN LIEU OF ALL OTHER WARRANTIES, REPRESENTATIONS AND CONDITIONS, EXPRESSED OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO OTHER PERSON OR REPRESENTATIVE IS AUTHORIZED TO MAKE ANY OTHER WARRANTY ON BEHALF OF ECP OR ASSUME FOR ECP ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THIS PRODUCT. IN NO EVENT WILL ECP BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, INCLUDING DAMAGES DUE TO ECP’S NEGLIGENCE.
THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE AND COUNTRY TO COUNTRY.

This marking on the product, accessories or literature indicates that the product and its electronic accessories should not be disposed of with other household waste.
To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.
Household users should contact either the retailer where they purchased this product, or their government office, for details of where and how they can take these items for
environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with
other wastes for disposal.
This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.