



# Magic Leap ML2M1 Headset and Controllers Instruction Manual

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## ML2M1 Headset and Controllers

Magic Leap 2 Safety Guide & Regulatory Information Draft 1.0

## Safety Guide



Carefully read our Quick Start Guide at [www.magicleap.com/quickstart](http://www.magicleap.com/quickstart) and this Safety Guide at [www.magicleap.com/safety](http://www.magicleap.com/safety) before using Magic Leap 2. Failure to do so and follow the instructions in this Safety Guide may result in serious injury, property damage, or damage to the Magic Leap 2. This Magic Leap 2 Safety

Guide ("Safety Guide") is provided to reduce the risk of personal injury, physical discomfort, pain, health issues, and property damage relating to the Magic Leap 2 Headset, Compute Pack, or Controller (collectively "Magic Leap 2" or "Device"), as well as the Compute Pack charger, Controller charger, and other Magic Leap branded accessories sold by Magic Leap or its authorized resellers. Please ensure that all Magic Leap 2 users read and understand this Safety Guide before using the Device. For the full Device description, user agreements, Magic Leap policies, and our return and warranty policies, please visit [www.magicleap.com](http://www.magicleap.com).

### **Changes**

Magic Leap may change or modify this Safety Guide from time to time to keep it accurate and complete. If we issue a new version of the Safety Guide, please discard your old copy and use the new one. We encourage you to review the Safety Guide and related information at [www.magicleap.com/safety](http://www.magicleap.com/safety) from time to time to ensure you are utilizing the latest version.

### **Setting Up the Device Prior to Use.**

Prior to using Magic Leap 2, you should read and follow all setup and operating instructions provided with the Device and on the Device. For example, be sure to go through the Fitting Guide and Visual Calibration, both of which you can access in Settings > Device > Calibration. Select "Run Fitting Guide" and "Run Visual Calibration" to begin.

### **Fit.**

Make sure the Headset is level and fits comfortably around your head without pain or pressure. For more guidance, please use the Fitting Guide (in the Settings menu on the Device). Make sure you can see clearly through the Headset and the nose pad rests comfortably on the bridge of your nose. If the nose pad does not provide a good fit for the Headset, replace it with another size and go through the Fitting Guide again.

If Visual Calibration fails, you may need to use the larger forehead pad. You can use the Fitting Guide to help you find the right nose and forehead pad sizes. Visit our Customer Care page at [care.magicleap.com](http://care.magicleap.com) for steps on how to fit your Magic Leap 2.

### **Visual Calibration.**

Adjust your Headset until you are able to see the full display, have successfully completed Visual Calibration, and are comfortable using the Device. If you do not pass the Visual Calibration, readjust your fit using the Fitting Guide and read the section below titled "Warning: Unsuccessful Visual Calibration." For an optimal experience, we recommend that Magic Leap 2 is used by people with an interpupillary distance (the distance between your pupils, also known as "IPD") between 54-76 millimeters. If you have an IPD outside that range, you may have a greater chance of experiencing visual pain or discomfort, and you may not have full visibility of the display.

### **Volume.**

When you first use Magic Leap 2, start with the volume at a low level and increase it until you can hear sounds clearly and comfortably. Avoid turning the volume up rapidly, especially if it becomes uncomfortable.



### **Unsuccessful Visual Calibration.**

You may have an increased chance of experiencing visual discomfort if you do not successfully complete the Visual Calibration. Magic Leap 2 relies on eye tracking to render content in a way that is designed to be comfortable for your eyes. Upon completing the Visual Calibration process, the Device will let you know if you were successful.



### **Reasons to see a Physician Prior to Use.**

See your physician before using Magic Leap 2 if you: have any conditions that impair your vision (e.g., binocular vision disorder); mobility issues; are pregnant or elderly; or have a heart condition or other serious medical condition such as seizures or migraines.



### **Intended Use.**

Magic Leap 2 is intended to provide a safe spatial computing experience. This intended use requires you to have an unimpaired sense of balance and motion. Do not use Magic Leap 2 while you are fatigued, ill, experiencing symptoms of illness, are under emotional or physical stress, or are under the influence of alcohol or drugs. Unintended uses of the Device increase the likelihood of injury and property damage. Never use Magic Leap 2 while driving, cycling, operating heavy machinery, or operating any other moving vehicle.

If any of the following occur while wearing the Device, the user should remove it immediately:

- The Device becomes too hot
- The Device causes discomfort
- If you think the Device may have been damaged

- Any dizziness or lightheadedness occurs



**WARNING:** Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally. The MANUFACTURER of the ME EQUIPMENT or ME SYSTEM may provide a description or list of equipment with which the ME EQUIPMENT or ME SYSTEM has been tested in a stacked or adjacent configuration and with which stacked or adjacent use resulted in normal operation.

#### **Virtual Objects.**

Remember that Device-generated objects you see in your spatial computing environment do not exist in the physical world. Do not attempt to sit or stand on such objects or use them for support.

#### **Environment.**

Use Magic Leap 2 only in a comfortable, safe environment. Magic Leap 2 is designed for indoor use only. To reduce the risk of fire or shock, do not use Magic Leap 2 near water or liquid. Magic Leap 2 should only be used in environments where the ambient temperature is between 10 °C and 25 °C (50 °F and 77 °F).

#### **Obstructions.**

Magic Leap 2 produces an immersive spatial computing experience that may distract you from and/or partially block your view of your physical surroundings. Always be aware of your surroundings when using the Device and ensure you have enough space around you. To reduce the risk of injury, property damage, or damage to the Device, only use Magic Leap 2 in indoor areas that are free of obstructions.

#### **Malfunction.**

Failure to use Magic Leap 2 as intended may cause the Device to malfunction and/or result in physical injury or property damage.

### **Care instructions:**

#### **Cleaning**

Ensure Magic Leap 2 is clean before each use (buildup of debris, dirt, oils, makeup, etc. can damage the Device and/or diminish the experience).

- Do not use flammable or abrasive cleaning agents on the Device.
- Do not steam or autoclave the Device.
- Do not submerge the Device in liquids or pour cleaning liquids over, into, or on the Device.
- Do not spill any liquid into, or oversaturate any system seams, ports, or perimeter of the lenses.
- Do not use abrasive products such as paper towels.
- Do ensure the Device is powered off and cooled down before cleaning.
- Do clean the Device according to the following cleaning instructions:

**Step 1 Disassemble:** Deconstruct the Headset by removing the nose pad, forehead pad, and lens insert. Use a Super Sani Cloth Wipe to perform steps 3 and 4.

**Step 2 Prepare Cleaning Wipe:** Prior to using each new wipe, squeeze out the excess fluid so that the wipe is damp but not dripping.

**Step 3 Cleaning:** Wipe all surfaces of the Device (including disassembled pieces) to remove any dirt or soil.

**Step 4 Disinfection:** Using a new wipe, clean all surfaces of the Device (including disassembled pieces) and ensure the proper disinfection contact time per label of the wipe. Use additional wipes as needed to maintain contact time. Rinse the Device by wiping it with an isopropyl alcohol wipe or clean sterile lint free cloth dampened (not dripping) with isopropyl alcohol.

**Step 5 Rinse and dry:** Rinse the Device by wiping it with a clean, sterile, lint-free cloth dampened (not dripping) with utility (tap) water. Dry the Device by wiping it with a sterile lint free cloth.

**Storage.** When the Device is not in use, store it in the Magic Leap Carry Case, or another storage case to minimize unintentional damage or exposure, in a room with temperatures between -20 °C to 45 °C (-13 °F to 113 °F). Do not leave your Magic Leap 2 in direct sunlight. This can cause excessive heat, which can damage the Device. To reduce the risk of injury, keep the fan exhaust ports and all other vents on your Compute Pack free and

clear of dust and other foreign objects. Covering the Device with materials that affect airflow may affect its performance and increase the chance of a fire or damage.



Do not leave the Device in direct sunlight as this can damage it. Excessive heat can cause an explosion. To reduce the risk of injury, keep the fan exhaust ports and all other vents on your Compute Pack free and clear of dust and other foreign objects. Covering the Device with materials that affect airflow may affect its performance and increase the chances of a fire or explosion.

**Repair.** Do not attempt to open or repair any part of the Device yourself. Repairs should be made only by Magic Leap or its authorized service providers.



**Shock Hazard** – Do not open, disassemble, or alter the Device. Failure to observe this warning can result in personal injury or death. Refer maintenance issues only to authorized Magic Leap service personnel.



Do not use the Magic Leap 2 unit if it is damaged or not functioning properly.



#### **Cables and cords.**

The cable attaching the Headset to the Compute Pack may be a choking or tripping hazard. To reduce the risk of injury, do not wrap any cables, cords, or wires around your neck. Do not get entangled with them. Do not chew, abraid, or cut any of them. Keep all cables and cords away from children.



#### **Excessive heat.**

Magic Leap 2 may become warm during normal use. Comply with any thermal warnings and advisory messages that may appear on your Magic Leap 2. To reduce the risk of personal injury, if any part of your Magic Leap 2 is hot to the touch or overheats, immediately remove your Headset, stop use, and let it cool down before you continue. Visit our Customer Care page at [care.magicleap.com](https://care.magicleap.com) for steps you can take if your Magic Leap 2 overheats. To reduce the risk of discomfort and injury (including minor burns) ensure that the inside corners of your Headset (as pictured above in this section) do not come into contact with your skin during use and place all pads (forehead pads and back pads) on your Headset before using it.



#### **Not for children.**

Magic Leap 2 is not a toy and should not be used by children under the age of 14. The Device is not sized for children, and improper sizing can lead to pain, discomfort, or negative health effects. Adults should ensure the Device is kept out of reach from children under the age of 14. Magic Leap 2 has not been tested on teenagers under the age of 18, meaning there may be an increased risk that the Device does not properly fit teenagers between 14 and 17 years old. Adults should monitor teenagers aged 14 and older during and after use of Magic Leap 2 to ensure they do not experience any pain or discomfort, spend limited time using the Device, and take breaks during use to decrease the risk of discomfort or pain (including the types of discomfort stated in the section below titled “Warning: Discomfort”), or other adverse symptoms. Prolonged use should be avoided. Adults should ensure that teenagers aged 14 and older only use Magic Leap 2 as recommended by this Safety Guide and all other documentation provided online and with Magic Leap 2. To reduce the risk of discomfort, pain, or injury, teenagers over the age of 14 should read this Safety Guide with an adult (e.g., a parent or guardian) and complete the Visual Calibration and Fitting Guide (accessible from the Settings menu) before using the device. Immediately discontinue use if the user does not successfully complete the Visual Calibration and Fitting Guide or feels any pain or discomfort while completing the Visual Calibration or Fitting Guide. Immediately discontinue use if any discomfort (including eye aches) is experienced during use of the Device.



#### **Discomfort.**

You may experience some discomfort while using Magic Leap 2 including but not limited to: visual discomfort, eye-strain, dizziness, nausea, impaired eye-hand coordination, lightheadedness, impaired balance, excessive sweating, headache, fatigue, tingling, burning or stiffness, or numbness. If you experience discomfort, immediately stop using Magic Leap 2. If you decide to resume use of the Device, before doing so, take a break and make sure you have properly set it up. Your risk of discomfort is heightened if: (i) you have never used Magic Leap 2 before; (ii) the Device is not properly set up prior to use; (iii) you use Magic Leap 2 for extended periods of time without a break; (iv) the device is used to view content that has a high likelihood of inducing motion sickness or nausea (e.g., games or movies where you are moving through open areas or viewing heights); (v) you have a history of

motion sickness, nausea, dizziness, eye strain, or headaches; or (vi) you use Magic Leap 2 in unfavorable lighting conditions. To minimize discomfort, consider slowly acclimating yourself to a spatial computing environment by initially limiting your use of Magic Leap 2 to shorter sessions and taking breaks during use of the Device. Be mindful of the nature of the content that you were viewing if you experience discomfort. You may re-experience discomfort if you view that content again or view similar content, and persistent discomfort may increase the chance of an injury. If you have serious or persistent discomfort, please consult with your physician. Until you have fully recovered, do not drive, operate machinery, or participate in activities that are physically or visually demanding or require unimpaired balance or coordination. [Missing Volume information found in PEQ USG]

### **Charger and battery safety.**

The Compute Pack and Controller each contain a Lithium-Ion battery and come with battery chargers. Please follow the instructions in this Section to reduce the risk of injury to you or others and to prevent damage to the device and property. Failure to follow these instructions may result in a hazard (e.g., fire, explosion, battery leakage, or electrical hazard), and may cause damage to the Device or other property.

Do not try to change the battery inside the Device or open the Device to access the battery, it is not user replaceable or serviceable. There is a risk of explosion if the battery is replaced with an incorrect type.

Only use the batteries, chargers, and charger cables we provide you to power Magic Leap 2. Do not substitute them with other power sources (such as other power adapters or external battery packs), as other power sources may not be compatible with the Magic Leap 2.

Do not use the batteries and chargers we provide you to power the Magic Leap 2 with any other products.

Periodically inspect your connection cords and chargers for damage or signs of wear. Do not use your chargers if the prong(s), enclosure, connector port, or connector cable is damaged, cracked, or exposed.

Do not try to charge or use the Device if: (i) it does not turn on after attempted charging; (ii) it overheats when it is used or charged; or (iii) the battery compartment is swollen, leaking liquid, or smoking.

Keep chargers dry and avoid water or liquid intrusion. Even after the Device dries off after coming into contact with water, the battery could corrode and increase the risks stated in this Safety Guide. Also, do not touch the battery, chargers, or cables with wet hands.

Do not disassemble, pierce, crush, deform, drop, or put a high degree of pressure on the Magic Leap 2 to reduce the risk of leakage or an internal short-circuit in the battery. If the battery or chargers leak, to reduce the risk of injury to you or others, please do not allow the liquid to come into contact with your skin or eyes. If there is contact, thoroughly wash the area that came into contact with water and seek immediate medical attention.



The Magic Leap 2 can only be charged using the Compute Pack and Controller charger provided by Magic Leap with the Device. The Device is not designed for use with any unauthorized charger, accessories, software, or equipment. Use of an unauthorized charger, accessory, software, or equipment may result in injury to you or others, cause performance issues, or damage the Device and other property.



**WARNING:** Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.



**WARNING:** Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the [ME EQUIPMENT or ME SYSTEM], including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.



The Magic Leap 2 should not be used while charging. If the Device is connected to the charger it will enter a charge-only mode (standby mode).



The Magic Leap 2 is not permitted to be connected to any third party equipment via the USBc port on the Compute Pack. Connecting to a third party device could result in injury to you and others, cause performance issues, or damage the Device and other property.



### **Disposal information.**

For European Union residents: This symbol on the product means that when the Device (and the batteries inside it) reach their end of life, they should be disposed of separately from household waste. Instead, please dispose of them in compliance with local laws and guidelines, for example, by taking them to a collection point designated by



local authorities. This separate disposal method helps prevent harmful effects to human health and our environment that could be caused by disposing of the Device in household waste. For more information on disposal and recycling of the Device, please visit [www.magicleap.com/recycle](http://www.magicleap.com/recycle).



**Seizures.**

Light flashes or patterns on Magic Leap 2 may trigger seizures, loss of awareness, involuntary movements, disorientation, altered vision, eye or muscle twitching, other muscular or visual abnormalities, severe dizziness, or other conditions causing blackouts or loss of consciousness, even if the user has never had a seizure or has no history of seizures or epilepsy. Immediately stop using the Magic Leap 2 if you experience any of these symptoms, and consult your physician before resuming use of the Device. If you have a history of, or have been diagnosed with symptoms linked to an epileptic condition, consult your physician prior to using Magic Leap 2.



**Repetitive motions.**

Using the Controller can make your muscles or joints hurt. If any part of your body becomes tired or sore while using Magic Leap 2, or if you feel symptoms such as tingling, numbness, burning, or stiffness, stop and rest for several hours before using the Device again. If you continue to have any of the above symptoms or other discomfort during or after use, stop using the Device and see your physician.



**No eye protection.**

Magic Leap 2 is not intended to provide eye protection against impact, debris, chemicals, UV light, or other harmful lights, particles, projectiles, or other physical hazards.



**California Proposition 65 For California,**

USA residents: Magic Leap 2 contains chemicals known to the State of California to cause cancer and reproductive harm. See [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov) for more information.



**Medical Device radio interference.**

Magic Leap 2 contains magnets or electronic components that emit radio waves, which could affect the operation of nearby electronics, including cardiac pacemakers, hearing aids, defibrillators, and other medical devices. If you have a pacemaker or other implanted medical device, do not use Magic Leap 2 without first consulting your physician or the manufacturer of your medical device.



**Radio frequency (RF) energy.**

Magic Leap 2 contains radio transmitters and has been designed, manufactured, and tested to meet the Federal Communications Commission (FCC) and Innovation, the Science and Economic Development (ISED) Canada, and the applicable European Union guidelines for RF exposure and Specific Absorption Rate. To ensure that your exposure to RF energy generated by the Wi-Fi and Bluetooth radios does not exceed the exposure limits set forth by these guidelines, orient the Device according to our Quick Start Guide available at [www.magicleap.com/quickstart](http://www.magicleap.com/quickstart) and any other instructions Magic Leap issues.

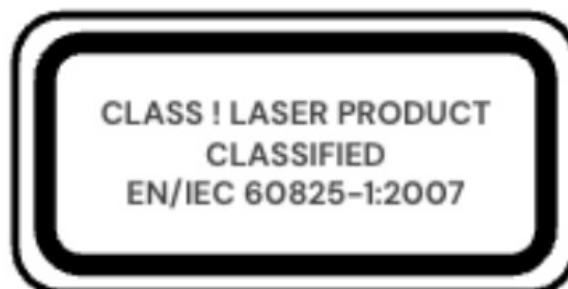


**Laser – Use of Controls.**

Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.



**Contains a Laser**



**Manufacturer information:**

Magic Leap, Inc., 7500 W. Sunrise Blvd. Plantation, FL 33322 USA

**Applicable standards and procedures:**

EN/IEC 60825-1:2007 Safety of Laser Products CLASS 1 LASER PRODUCT

**Laser specifications:**

This laser product is designated as Class 1 during all procedures of intended use and operation.

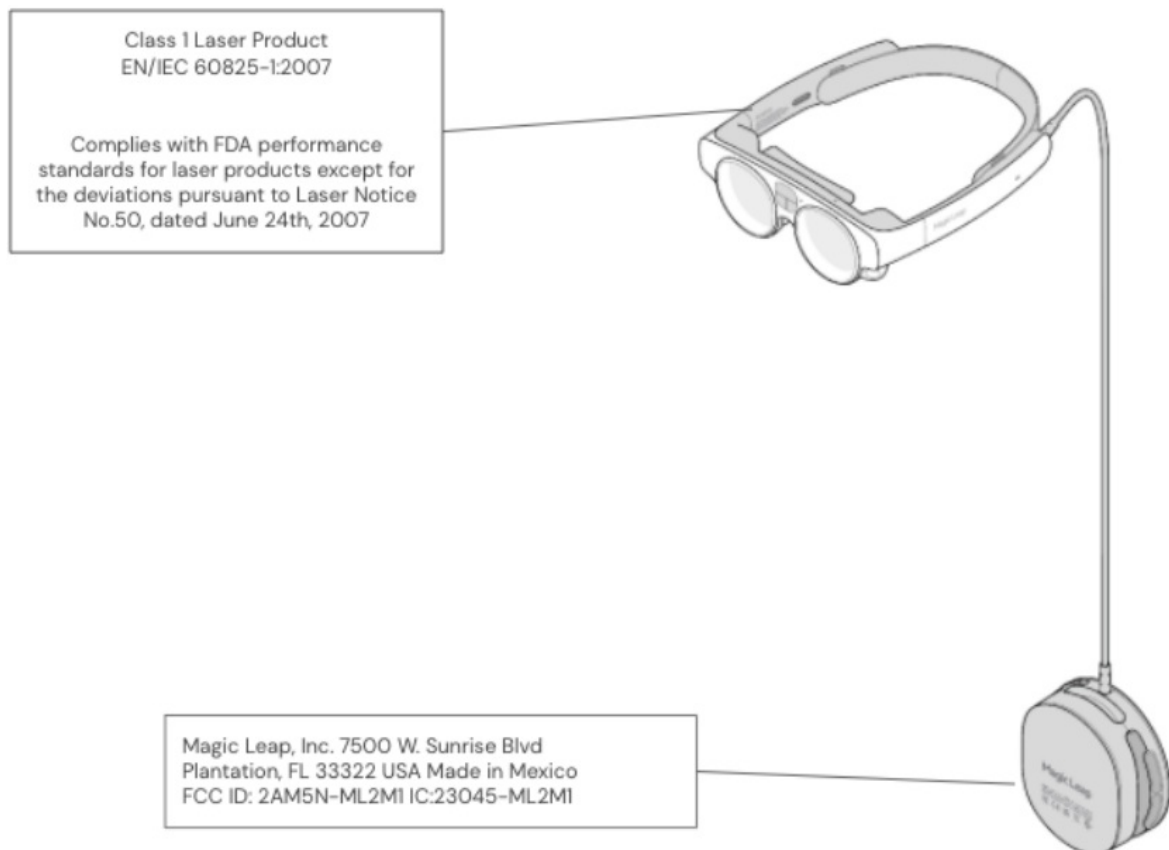
**Laser parameters:**

Wavelength 850 nm Laser Power for classification < 10 uJ for single pulse packets. Mode of operation: Pulsed pulse width 3.81 and 5.6 nSec Pulse Frequency 80.32 and 60.24 MHz, respectively. Illumination cone 72.5 H x 64.4 V

**Labels and label placement:**

The Certification label is located on the Headset's inner left temple, between the picture camera and the back pad. It reads as follows: Class 1 Laser Product EN/IEC 60825-1:2007. Complies with FDA performance standards for laser products except for the deviations pursuant to Laser Notice No.50, dated June 24th, 2007

**Note:** Explanatory label does not appear on Device. Full label reproduction appears in this Safety Guide.



The Manufacturer Identification label is located on the back of the Compute Pack clip. Turn the Compute Pack over to see it. It reads as follows:

7500 W. Sunrise Blvd., Plantation, FL 33322, USA, Assembled in Mexico.

**Note:** the date of manufacture is traceable by unique serial number. The serial number and model number are located under the rear fit pad on the inside of the Headset adjustment band.

**Magic Leap 2 regulatory information**

**REGULATORY MARKS.** Regulatory information, certification, and compliance marks for the Magic Leap are available on the Device itself and packaging. For a complete listing please see Settings > Device > About > Regulatory on your Device or visit [www.magicleap.com/legal](http://www.magicleap.com/legal).

**FEDERAL COMMUNICATION COMMISSION COMPLIANCE STATEMENT.**

Magic Leap 2 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. The Device 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 use or installation. If the Device does cause harmful interference to radio or television reception, which can be determined by turning the Device off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the Device and applicable receiver.

- Connect the Device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

#### **FCC Caution:**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the Device. The Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (i) the Device may not cause harmful interference, and (ii) this device must accept any interference received, including interference that may cause unintended use or operation.

#### **INDUSTRY CANADA COMPLIANCE STATEMENT.**

The Device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (i) this device may not cause interference, and (ii) the Device must accept any interference, including interference that may cause undesired operation of the Device. This Class B digital apparatus complies with CAN ICES-3(B)/NMB-3(B). The operation in the band 51505250MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

#### **EUROPEAN UNION IMMUNITY STATEMENT.**

In the event of an Electrostatic discharge (ESD), Magnetic and Electric field disturbance, the user may experience a momentary loss of operation. In the unlikely event that an ESD, Magnetic and Electric field disturbance event results in prolonged loss of operation, a system reset of the Device may be required.

#### **EUROPEAN UNION COMPLIANCE STATEMENT.**

Magic Leap hereby declares that this product is in compliance with Directive 2014/53/EU. For Magic Leap's full declaration of conformity, see [www.magicleap.com/legal](http://www.magicleap.com/legal).

#### **JAPAN COMPLIANCE STATEMENT.**

The Device complies with Japan Radio Law (JRL) and Japan Telecommunication Business Law (JTBL). Indoor use only, except for connection to Base stations or Land mobile relay stations for a 5.2 GHz band high-power data communication system.

#### **HUB Regulatory Information FEDERAL COMMUNICATION COMMISSION COMPLIANCE STATEMENT.**

The Device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (i) the Device may not cause harmful interference, and (ii) the Device must accept any interference received, including interference that may cause undesired operation.

#### **INDUSTRY CANADA COMPLIANCE STATEMENT.**

This Class B digital Device apparatus complies with CAN ICES-3(B)/NMB-3(B).


#### **CEC APPLIANCE EFFICIENCY COMPLIANCE.**

The Device complies with the California Energy Commission (CEC) energy efficiency standards for battery charger systems set forth at California Code of Regulations Title 20, Sections 1601 through 1608.

# DRAFT

Magic Leap, Inc., 7500 West Sunrise Blvd.  
Plantation, Florida 33322, USA




## Documents / Resources

	<p><a href="#">Magic Leap ML2M1 Headset and Controllers</a> [pdf] Instruction Manual ML2M1, 2AM5N-ML2M1, 2AM5NML2M1, ML2M1 Headset and Controllers, ML2M1, Headset and Controllers, Controllers, Headset</p>
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## References

-  [Homepage](#)



-  [Legal and Regulatory Information for Magic Leap 2](#)
-  [magicleap.com/safety](https://magicleap.com/safety)
-  [P65Warnings.ca.gov](https://P65Warnings.ca.gov)

Manuals+.