THE MAGIC OF MIXED REALITY (MR)

Softserve R&D

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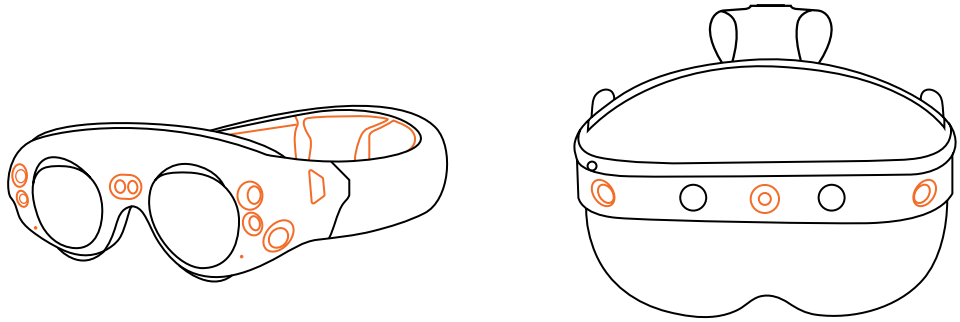
Mixed reality (MR) is one of the next big waves in spatial computing and when MR reaches full potential, it will change how we all use and think about technology.



Magic Leap One and Meta 2 Dev Kit

Introduction

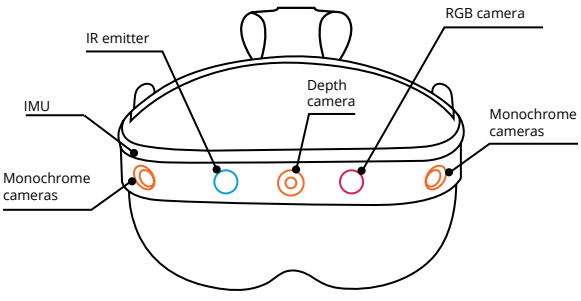
Magic Leap One creates an experience that is less immersive than Virtual Reality and it comes with challenges that are common to all AR headsets. In general, however, Magic Leap One is a good option for mainstream adoption in augmented reality (AR) and MR.

Meta 2 is great for virtual element interaction. Hand gestures are intuitive and easy to use. But if you plan to use an AR headset for longer than 30 minutes, you should choose Magic Leap One because longer use of Meta 2 may cause headaches.

Each device were great standalone solutions when released—and remain the best two VR headset options on the market—but today, using a combination of both with applications is a better approach. What that combination looks like depends on specifications.

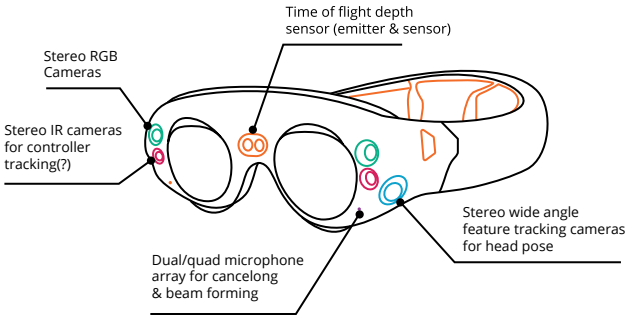
Magic Leap and Meta 2 Comparison

Construction



Meta 2 Developer Kit

**Inertial Measurement Unit (IMU) is a self-contained system that measures linear and angular motion, usually with a triad of gyroscopes and accelerometers.*



Magic Leap One

Characteristics

Characteristic	Meta 2	Magic Leap One
Field of View and Resolution	90° field of view and projected display with 2560x1440 resolution	Horizontal field of view of 40°, a vertical FOV of 30°, and a diagonal FOV of 50°.
Minimal requirements	• Powerful PC with Windows 8 or 10; • Processor: Intel Core i7 – 6700 or AMD FX9590 or better; • Memory: 16GB RAM DDR4; • Graphics: NVIDIA GeForce GTX 1050Ti or AMD Radeon RX 480 or better; • HDMI 1.4b video output; • At least 2x USB 3.0 ports.	The headset doesn't require continual connection to the PC, because it is wired to the Lightpack (which consists of NVIDIA Parker SOC). Inside this system-on-a-chip there are 2 Denver 2.0 64-bit cores + 4 ARM Cortex A57 64-bit cores and NVIDIA PascalTM, 256 CUDA cores; 8GB of RAM and 128GB of storage
Recommended requirements	• Powerful PC with Windows 8 or 10; • Processor: Intel Core i9 –8950HK or better; • Memory: 32GB RAM DDR4; • Graphics: NVIDIA GeForce GTX 1070 or better; • HDMI 1.4b video output; • At least 2x USB 3.0 ports.	Couldn't be configurated.

Level of Detail

Object in Meta 2

In Meta 2, all virtual 3D objects look very good within the headset. Animations are smooth and natural. The quality of the images depends solely on the quality of the 3D model used. From texture to maps—this headset offers an amazing refinement level

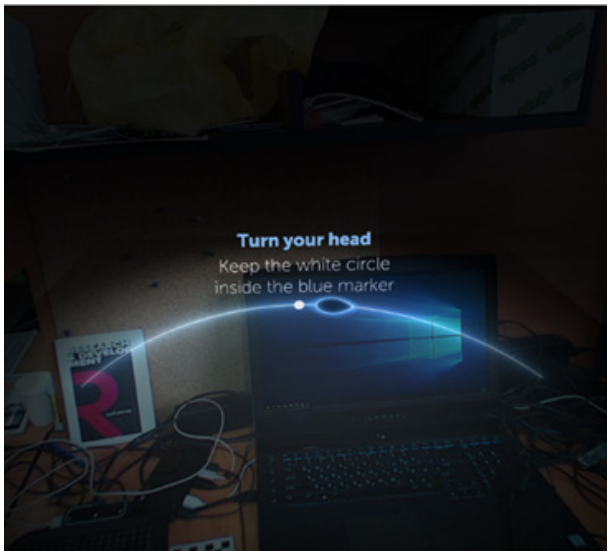
Object in Magic Leap One

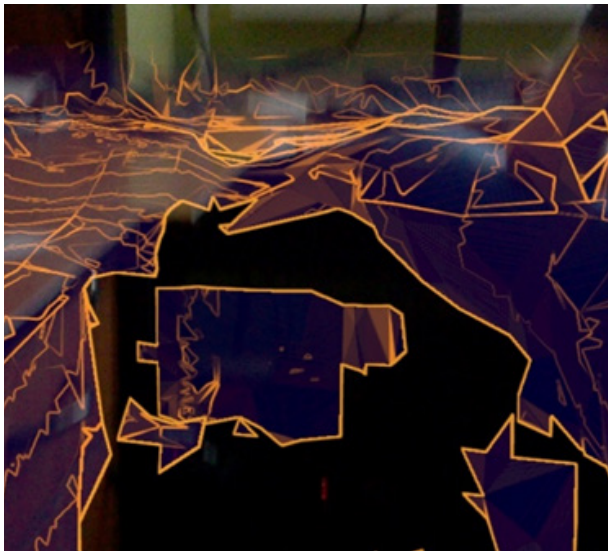
3D objects in Magic Leap One are projected in front of you within a limited field of view. These objects appear as if they are in the room with you and can be touched, grabbed, and pinched which provides very realistic interactions.

(Magic Leap also has Eye tracking, but this feature does not work as well as it should, and requires eye recalibration for each user.)

Environment Mapping

Environment mapping setup takes just a few seconds after which, the user can start his or her journey into the AR world.





Room lighting should be absent or very limited, not only for the environment mapping, but for the quality of virtual objects in the headset. Magic Leap One has much better portability so it's possible to set up a full room in only a few steps. And real-time scanning with great object tracking provides the perfect immersive experience.

Technically, the Meta 2 is a tethered device, so it shouldn't be compared with the Magic Leap One. But currently, the product category is lacking due to the low number of devices on the market. Realistically, as long as an electronic device is head-mounted with a see-through display, it will be compared to other headsets as the Meta 2 is with Magic Leap One here.

Use Cases

- **Corporate training in pre-production:** Display schematics of high-value equipment
- **Design review:** Shorten design cycles by eliminating 3D print delays
- **Simultaneously save time and money:** Use virtual, high fidelity prototypes—even from across the world.
- **Visualization of costly prototypes:** Present desired objects at 1:1 scale
- **AR workplace:** Replace monitors and required appliances
- **Retail:** Virtual marketplaces enable interactive remote visits and purchases
- **Education:** Virtual delivery of class materials or specialized courses
- **Examples:** Chemical processes, historical battles, etc.

ABOUT US

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SoftServe delivers open innovation—from generating compelling new ideas, to developing and implementing transformational products and services.

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