technology today

Alan Pierce
pierceaj@techtoday.us: on Twitter @ TechToday-US

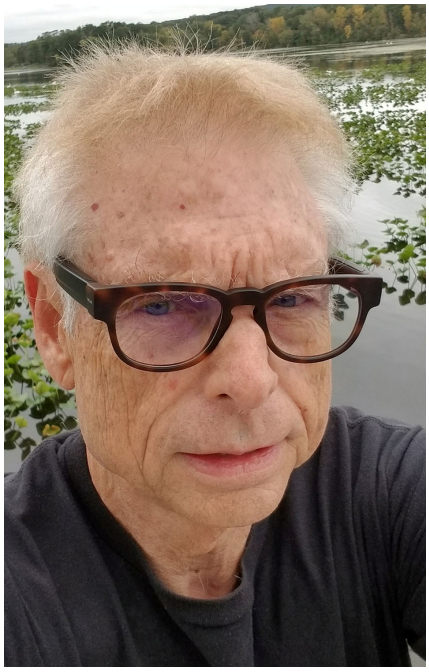
Fauna Eyeglasses Combine Sight and Sound

Eyeglasses historically provided people with improved sight through prescription lenses and reduction of sun glare plus protection from the sun's harmful rays through the use of sunglass coatings. Smart Augmented Reality (AR) eyeglasses could soon superimpose computer-generated images or information onto a user's view of the real world. Apple has been working on prototype AR system since 2015 and will have a marketable product by 2023.

So far AR vision eyewear products have been geeky and have been mostly limited to sight impaired people and as a heads up display for surgical teams, scientists, engineers, students in special fields and workers in industrial settings.

A number of companies have rolled out what they are calling "smart glasses" that allow audio and photography in normal looking eyewear. In my opinion giving people the ability to secretly shoot video and photos is creepy and bound to get some wearers or their friends in trouble.

In this column we will take a look at what Fauna has added to the old eyeglass paradigm. Fauna eyeglasses have integrated into their frames Bluetooth technology plus Micro Mechanical Systems (MEMS) beam forming microphones and speakers. This allows the wearer to make and receive phone calls or listen to music without anything in their ears. Fauna glasses do not include the ability to take photos and therefore I felt the perfect product to describe how eyewear audio works.

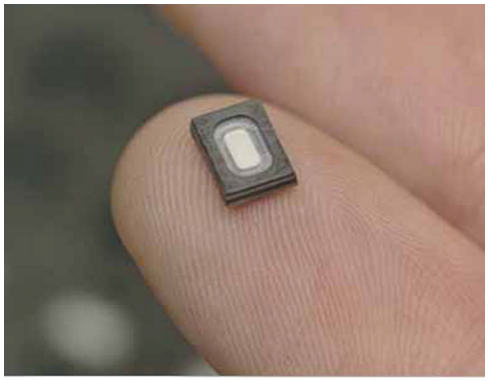


Fauna eyeglasses come with sunglass or blue light filtering lenses. It is obvious what the sunglass lens will do but many people don't realize that their computer, smartphone, and tablet screens also emit harmful rays that can be filtered out by blue filtering lenses. The glasses are designed so the lens they are shipped with can be removed and replaced by an optician with prescription lenses. The Fauna frames are physically light in weight (1.8 ounces) even though they are loaded with micro sized electronic components.

The physical look of the eyeglasses made it clear that the engineering team that designed them understood that function could not overshadow the physical form of the product if they wanted to successfully market them. The Fauna audio glasses that I tested are styled to please most fashion conscious consumers.

Before taking a look at features and specifications I want to point out what I feel is the most outstanding feature of this product. It allows you to be on your phone or listening to music with nothing stuck in your ears. This fact grants you full situational awareness when you are engrossed in a phone call or listening to music while jogging, walking, or performing other activities on public streets and roads.

The MEMS speakers, incorporated into this product, are designed to beamform sound waves directionally toward the wearers ears. The two MEMS microphones are also designed to beamform incoming sound to mostly pick up what the wearer is saying.



The tiny size of the Micro Mechanical Systems (MEMS) speakers found in the Fauna Glasses.

Beam forming minimizes audio leakage to prevent the microphones from picking up the sound from the eyeglasses speakers which would create an echo that would be heard by the person on the other side of the phone call. To further prevent the microphones from picking up the sound produced by the MEMS speakers, the company incorporated echo cancelation technology which is a form of noise cancelation that targets any sound feedback from the speakers that might reach the microphones. The system does not fully prevent someone who is standing very close to the wearer from hearing ongoing conversations.

The audio controls are built into the eyeglass frame arms and charging is performed when the glasses are placed into their storage case. The **online version** of this column has more photos, technical information, and the pros and cons of this product.

Taking it a Step Further
What do you see as the roadblocks to audio or VR eyeglasses becoming popular?

Alan Pierce, EdD, CSIT is a technology education consultant. Visit www.technologytoday.us for past columns and teaching resources