

News Release

Alpine and Konica Minolta to Start a Joint Development on the 3D Augmented Reality Head-up Display for Automotive Use

Tokyo (November 16, 2017) – Alpine Electronics, Inc. (Alpine) and Konica Minolta, Inc. (Konica Minolta) today announced a joint development on the head-up display (HUD) applying the 3D augmented reality (AR) technology for automotive use.

The joint development aims to enhance the innovative 3D AR HUD technology which was originally developed by Konica Minolta as the world's first* in January 2017. The companies will work together on further advancements in technology suitable for mass production in fiscal 2021.

* As a technology that displays images on a windshield three dimensionally by projecting multiple images simultaneously at multiple distances from a driver without sensing the driver's eye position (research by Konica Minolta)

Recently, the HUD's adoption in vehicles has been accelerating to serve more desired functions as an important human-machine interface (HMI) tool to indicate the drivers many kinds of information such as road conditions and dangerous obstacles.

Utilizing the 3D AR technology in the HUD enables information to be overlaid simultaneously and individually on multiple objects such as pedestrians and obstacles to the exact distance and precisely in focus. It can also display information at an adequate distance depending on the driving speed and the driver's view. The 3D AR HUD will help transform safe driving with ease and comfort in addition to higher level of safety.

Konica Minolta's 3D AR HUD forefront technologies including optics, high-precision machining, performance material, image processing and Alpine's product development, manufacturing expertise in the automotive field along with its HMI technologies will complement each other in this joint development. Leveraging the 3D AR breakthrough, it will have a profound impact on evolution of the high-performance HUD to achieve the automotive industry's highest level in safety, security, comfort and convenience for drivers.

For media inquiries please contact:

Alpine

+81-3-5499-8111

pr@apn.alpine.co.jp

Public Relations and IR Group

Alpine Electronics, Inc.,

Konica Minolta

+81-3-6250-2100

press@konicaminolta.com

Corporate Communications Dept.

Konica Minolta, Inc.

###