



Arbe Launches New High-Density Automotive Radar Antenna, a breakthrough in ADAS Safety and Autonomous Driving

Launch of Most Advanced Radar Antenna in the Market Detects People Around Vehicles with Superior Object Separation, High Resolution, and Long Range

Arbe, the provider of a next-generation radar system offering ADAS and autonomous vehicles high-resolution radar 100 times more detailed than any available solution, today announced the launch of the first radar antenna designed to protect pedestrians by detecting fast-moving or stationary objects at long range, in daylight or at night, and in any weather conditions. The new Phoenix High-density Antenna is the densest antenna array available, with a form factor designed to perfectly fit automakers' current specifications. With the largest number of channels, widest field of view, and highest resolution on the market, Arbe's radar antenna delivers the unprecedented ability to detect people separate them from the sidewalk or roadside, breaking new ground in ADAS and AV safety.

Field-tested on steep and curving roads and sidewalks, the Phoenix High-density Antenna has been proven to detect both small objects like pedestrians, bicycles, and motorcycles, and large objects like vehicles of all sizes, as well as stationary objects like guardrails, road obstacles and parked cars, whether in daylight or darkness and in rain, fog, or snow. Arbe's solution provides OEMs and tier-one automotive manufacturers with the most advanced radar in the market, featuring the highest resolution, low power consumption per channel, and highest sensitivity.

At 14-by-11 centimeters, the Phoenix High-density Antenna is easily integrated within the space designed for basic radar units in vehicles today, without the limitations on size, power consumption, and cost that compromise safety in other solutions. The system utilizes the full space, receiving and transmitting 96 channels, eliminating the common problem of false alarm that current radars are suffering from in the industry. In achieving that optimal form factor, the Arbe antenna surpassed a critical technological milestone. Size is important to automakers also because it's aesthetically pleasing to car owners, as the radar is hidden behind the grill or headlight.

Other key features that reduce the risk to pedestrians include high resolution at 1-degree azimuth and 2-degree elevation—an industry first; a wide field of view (FoV) at 100 to 140-degree azimuth and 30-degree elevation; and a long range currently at 250 meters and projected to reach a remarkable 400 meters in future releases.



These superior specifications enable the Phoenix High-Density Antenna to overcome the limitations of typical radars. That is, high resolution and a wide FoV in elevation allow the radar to focus on both moving and stationary objects at the same time, making it easier to distinguish people from the ground they're standing on, while a broader FoV in azimuth makes it possible to see what's happening on the sides of the road. Also, the high channel count is critical to eliminate false alarms created in the current radar designs due to their low density.

According to Arbe CEO Kobi Marenko, the Phoenix radar system is a vital addition to the sensor suite that vehicles with high standard of safety require. "OEMs today are challenged to meet stricter safety standards set by the New Car Assessment Program, and they'll need to raise their ADAS levels without compromising safety. This opens the door to new revenue-generating features like autonomous emergency steering and braking, adaptive cruise control with autonomous lane changes, and, most importantly, pedestrian and cyclist safety. Our imaging radar is the first in the industry to address all of these concerns—and with a revolution in the false alarms rate, a major concern for automakers."

About Arbe

Arbe provides a next-generation radar system designed for ADAS and autonomous driving. The company's flagship product, Phoenix, is the first high-definition 4D imaging radar that produces detailed images, identifies, tracks and separates objects in high resolution in both azimuth and elevation in a long range and a wide field of view, while applying AI-based post-processing and SLAM (simultaneous localization and mapping). Arbe's patented technology offers automakers a next-generation radar that is 100 times more detailed than any other radar solution on the market, capable of operating in any weather or lighting condition and easily differentiating between moving objects (like pedestrians) and stationary objects (like guard rails). By providing crucial data that enables safer and more accurate decisions, Arbe's radar solution acts as the "eyes and brains" of ADAS and AVs. Founded in 2015 by an elite team of semiconductor engineers, radar specialists, and data scientists, Arbe is based in Tel Aviv, Israel, and has offices in the United States and China.