Phoenix:
HD Radar for Perception

Truly Safe and Commercially Viable 4D Imaging Technology

Data captured by Arbe's Phoenix Radar provides the building blocks for the industry's best radar image quality. Resolution higher than any radar on the market, elimination of false alarms and doppler ambiguities, and long range along with wide field of view powerfully combine to elevate L2+ and higher applications from a nice-to-have comfort solution to must-have safety features.

Safe execution of highway maneuvering and obstacle avoidance

Detailed and reliable image quality to detect vulnerable road users in challenging scenarios such as dense urban environments and at night

Free space mapping in all environmental conditions for autonomous decision making

Arbe's HD Radar for Perception

The platform supports over 100,000 detections per frame with a point cloud density unparalleled by any other radar solution on the market, revolutionizing radar processing and post processing. The platform includes:

Proprietary RF Chipset

Provides best-in-class performance for channel isolation, sensitivity, and transmit power at the industry's lowest cost per channel. The chipset achieves higher resolution in both azimuth and elevation by two orders of magnitude, for reliable detection of the vehicle's surroundings at all times.

High-Density Radar Antenna

Delivers a radar form factor designed to fit automakers' current sizing and vehicle mounting specifications perfectly, while enabling optimal antenna design for automotive wavelength thanks to the high number of channels.

Radar Processing Chip

Powers the processing of massive amounts of raw data in real-time with unprecedented computational abilities. The processor scales from high resolution to ultra-high resolution to support the data generated from 2,304 virtual channels while maintaining low power consumption.

Proprietary Post-Processing Software Stack

Software Stack of AI-based perception algorithms performs real-time clustering, self-localization, false-target filtering, and classification. Post-processing the radar's data enables advanced perception for a comprehensive understanding of the vehicle's surroundings.

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Every Detail Matters

The Ultra-High-Definition Difference

The future of driving hinges on the ability to perceive the world with unparalleled accuracy. Arbe's Phoenix Radar delivers exactly that: industry-redefining object separability for precise detection and object tracking, even in the most challenging conditions and demanding environments.

Phoenix Perception Radar:

Easily installed behind the bumper or grille to maintain the integrity of the vehicle design, Phoenix delivers detailed imaging thanks to native resolution supported by 2,304 virtual channels.

0.7° Azimuth
0.9° Elevation

Ultra High Resolution

120° Azimuth
30° Elevation

Wide Field of View

300 m

Long Range

20+ FPS

Real Time

10 cm–80 cm

Native Range Resolution

0.1 m/s

Doppler Resolution

~0

False Alarms

100s

Objects Identified

Innovative to the Core

Unfailing Perception for Unfailing Performance

The first radar technology detailed enough to enhance perception algorithms, it differentiates between static and dynamic objects, allows continuous tracking of objects outside the line of sight, and predicts future movement direction based on object trajectory.

Achieving Free Space Mapping in Real Time

The only Imaging Radar with high resolution in all four dimensions - range, elevation, azimuth, and doppler-in long range in all environmental conditions for real-time, radar-based free space mapping.

Perfectly Positioned

Car makers can locate Arbe's systems in a variety of positions according to the unique interplay of the vehicle's size and number of sensors, for total design flexibility.

Elimination of Phantom Objects

No matter the speed, elevation, range, or surrounding weather and lighting conditions, Arbe's radars differentiate true threats from false alarms to ensure a safe road ahead.

Ensuring Redundancy and Diversity

Arbe's systems deliver highly detailed sensing in environmental conditions where optic sensors fail, making it a critical sensor for unfailing redundancy and uncompromised safety. It also provides critical sensing data diversity, offering depth, relative velocity, object orientation, and long range detection at levels optical sensors can't match.

The Future-Proofed Roadmap

Open to OEM algorithm – current or future – Arbe's radar solutions are designed to enable perception to evolve, and to power the rollout of software-defined features for existing and new customers without the need for additional hardware throughout the vehicle lifecycle.

Arbe (Nasdaq: ARBE), a global leader in Perception Radar Solutions, is spearheading a radar revolution, enabling eyes-off driving, paving the way to full autonomy. Arbe's radar technology is 100 times more detailed than any other radar on the market and is a critical sensor for any environment and lighting condition. The company is empowering automakers, Tier-1 suppliers, autonomous ground vehicles, commercial and industrial vehicles, and a wide array of safety applications with advanced sensing and paradigm-changing perception.