

# The Building Blocks of the Best Radar Image Quality



## Truly Safe and Commercially Viable 4D Imaging Technology

Data captured by Arbe's Perception 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 Radar Development Platform

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.

# 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:

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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  
0.8° Elevation**

Ultra High  
Resolution



**100° Azimuth  
30° Elevation**

Wide Field  
of View



**350 m**

Long  
Range



**20+ FPS**

Real  
Time



**7.5 cm-60 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

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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.

### Perfectly Positioned

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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.

### Ensuring Redundancy and Diversity

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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.

### Achieving Free Space Mapping in Real Time

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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.

### Elimination of Phantom Objects

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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.

### The Future-Proofed Roadmap

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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 truly safe driver-assist systems today while paving the way to full autonomous-driving. Arbe's radar technology is 100 times more detailed than any other radar on the market and is a critical sensor for L2+ and higher autonomy. 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. Arbe is based in Tel Aviv, Israel, and offices in China, Germany and the United States.