

# EchoDrive

Autonomous Vehicle Radar

Dynamic Machine Perception.  
Cognitive Radar.

EchoDrive is an advanced imaging radar designed for SAE Level 4+ autonomous vehicles.

Gives AV Developers unprecedented control to direct specific measurements of the driving scene.

Dynamically task the radar's advanced measurement capabilities to disambiguate the driving scene.

Materially increase probabilistic confidence in drive decisions and actuations.

Improve cognitive functions of the AV stack.

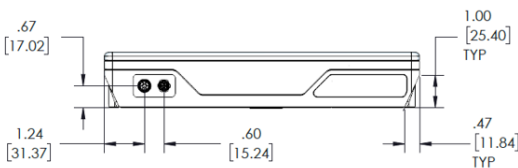
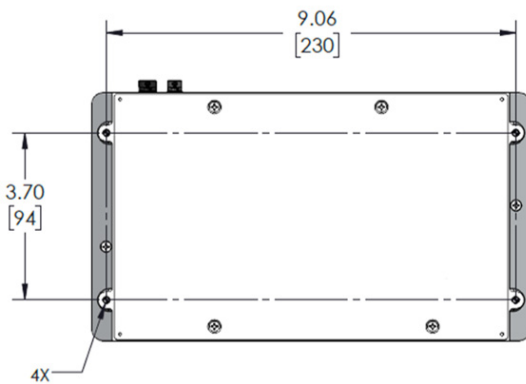
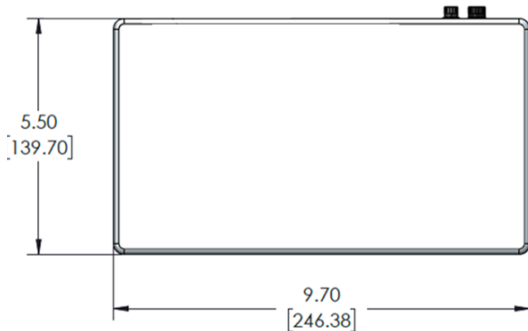
Unlock combined value of knowledge repositories, other sensors, and real-time information.

Enhanced machine perception improves safety for humans and vehicles.



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## Performance

Range (0 dBsm, 12dB SNR)	> 250 m
Field of view	120° azimuth x 20° elevation
Range resolution	< 0.1 m
Angular resolution	±0.4° azimuth x ±1.5° elevation (Raleigh 3dB)
Velocity resolution	< 0.2 m/sec
Update rate	1,000-250,000 pixels/sec
Frequency	76.0 - 77.0 Ghz (channelized) 77.0 - 81.0 GHz (channelized)

## Cognitive Radar

EchoDrive is a high-performance imaging radar that unlocks cognitive functions in the AV stack. EchoDrive provides high-resolution imaging while enabling the AV stack to interrogate the driving scene based on inputs from other levels of the AV system: other sensors; repositories of the scene, localization, or path planning layers; or even the control layer.

## SWaP and Environmental

Size	24.6 cm x 14 cm x 4.3 cm
Weight	1.9 kg (4.2 lbs)
Power	DC +24 V or +48 V
Operating	80 W
Operating temp	-40°C to +67°C
Weather Protection	IP66

## Integration and Data

Data I/O	10 Gbps Ethernet
Control I/O	1 Gbps Ethernet
GPIO	4 timing strobes
Data output	4D data cube (az, el, range, doppler)
Data rate	2.6 Gbps (max w/out compression)
Timing	PtP +/-25us accuracy

## FCC Identifier

This device has not yet been authorized by the FCC, but conforms to global standards defined for automotive radar operation.

### Ordering Information

EchoDrive

700-0010-201-100