



SAĞLAMTEK
Havacılık & Savunma A.Ş.

BORADAR-100

Millimeter-Wave Altimeter Radar for UAV Applications

BORADAR-100 provides accurate and reliable altitude measurement by transmitting millimeter-wave FMCW signals toward the ground and processing the reflected signals in real time. The radar continuously determines the relative distance between the aircraft and the terrain, enabling stable altitude control during flight.

SPD: 12.6 m/s
MODE: ALT HOLD



High Accuracy
±0.1 m



All-Weather
Operation



Compact &
Lightweight



High Anti-Interference
Capability



ALT: 87.4 m

PRODUCT OVERVIEW



BORADAR-100 is a compact and lightweight radar altimeter designed for unmanned aerial platforms and other low-altitude airborne applications.



Based on FMCW radar technology, the system delivers precise altitude measurements with strong resistance to environmental interference. Its radar-based sensing capability allows reliable operation in challenging conditions where optical sensors may be affected by fog, smoke, dust, or reduced visibility.



With its compact mechanical design, low weight, high level of integration, and reliable measurement performance, BORADAR-100 can be easily integrated into UAVs, helicopters, small aerial platforms, and other autonomous systems requiring dependable altitude information.



The radar is designed to support continuous operation in demanding environments and provides a robust sensing solution for flight control, terrain following, autonomous landing, and low-altitude navigation applications.



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BORADAR-100

UAV Altimeter Radar

PRODUCT CHARACTERISTICS



Accurate, Reliable and Mission-Ready



Extended Detection Range

BORADAR-100 provides reliable altitude measurement over distances of up to 100 meters, supporting a wide range of low-altitude flight and autonomous navigation applications.



High Measurement Precision

Advanced FMCW signal processing enables stable and accurate ranging performance across the operational measurement range.



Multiple Communication Interfaces

The system supports commonly used communication interfaces, including UART (TTL) and CAN, allowing straightforward integration with flight controllers, mission computers, and embedded control systems.



Efficient and Highly Integrated Architecture



Flexible System Integration

UART and CAN communication options provide flexibility for integration into different aerial platforms and control architectures. The CAN interface supports communication speeds of up to 500 kbit/s.



Integrated Signal Processing

Advanced signal processing algorithms perform key functions including target detection, signal filtering, and distance estimation within a highly integrated architecture.



Strong Interference Resistance

Optimized antenna design and signal processing algorithms reduce sidelobe-related interference and improve the signal-to-noise ratio, providing stable detection performance in electromagnetically challenging environments.



Continuous Operation in Demanding Environments



All-Weather Capability

BORADAR-100 is designed to maintain reliable measurement performance under challenging environmental conditions such as rain, snow, fog, smoke, and dust.



High Environmental Protection

The radar enclosure provides protection against water and dust ingress, supporting dependable operation in demanding outdoor and airborne environments.



Reliable 24/7 Operation

The system is suitable for continuous operation and applications requiring uninterrupted altitude information throughout day and night missions.



Compact, Lightweight and Easy to Integrate



Compact Form Factor

The radar is designed with a compact mechanical structure suitable for integration into UAVs and other platforms where installation space is limited.



Low Platform Load

Its lightweight architecture minimizes additional payload burden and helps preserve the endurance and performance of the host platform.



Simple Installation

The system can be integrated using suitable mechanical mounting methods and is designed for straightforward installation on a wide range of unmanned and autonomous platforms.



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TECHNICAL SPECIFICATIONS

Parameter	Condition	Minimum	Typical	Maximum	Unit
SYSTEM CHARACTERISTICS					
Modulation Mode	—	—	FMCW	—	—
Update Rate	—	—	40	—	Hz
Power Consumption	@ 5 V DC, 25 °C	—	1.1	—	W
RANGING CHARACTERISTICS					
Detection Range	@ 0 dBsm	0.1	—	100	m
Ranging Accuracy	0.1–30 m	—	±0.1	—	m
Ranging Accuracy	30–100 m	—	±1	—	m
Range Resolution	0.1–30 m	—	0.75	—	m
Range Resolution	30–100 m	—	1.5	—	m
ANTENNA CHARACTERISTICS					
TX Beamwidth	Azimuth Plane, -6 dB		41		deg
TX Beamwidth	Elevation Plane, -6 dB		37		deg
RX Beamwidth	Azimuth Plane, -6 dB		41		deg
RX Beamwidth	Elevation Plane, -6 dB		37		deg
ELECTRICAL, MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS					
Operating Voltage	5–12				V DC
Storage Temperature	-40 to +85				°C
Operating Temperature	-40 to +85				°C
Weight	81				g
Dimensions, including housing	107 x 61 x 21				mm

 The availability of mmWave radar functions may vary by country or region. Please refer to local laws and regulations for details.

BORADAR-100

UAV Altimeter Radar

Application Areas

BORADAR-100 is designed for reliable altitude measurement and low-altitude navigation support across a wide range of unmanned and autonomous platforms. Its compact structure, radar-based sensing capability, and all-weather operation make it suitable for applications where stable altitude information is critical.

The system can be integrated into UAVs, unmanned surface vehicles, robotic platforms, and other autonomous systems requiring precise distance measurement from the ground or target surface.



Mapping and Surveying

Stable altitude data for mapping, terrain profiling, and low-altitude survey missions.



Agricultural UAV Operations

Consistent flight altitude for crop monitoring and precision agriculture.



Logistics and Delivery UAVs

Reliable altitude awareness during autonomous delivery and landing operations.



Firefighting and Emergency Response

Dependable sensing in smoke, dust, and low-visibility environments.



Search and Rescue Missions

Safe operation in complex terrain and challenging field conditions.



Power Line and Infrastructure Inspection

Accurate altitude feedback during close-range inspection tasks.