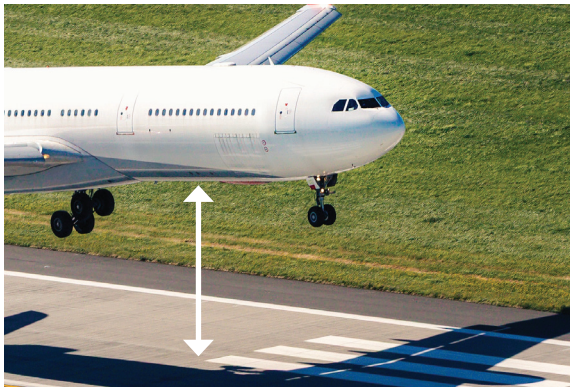
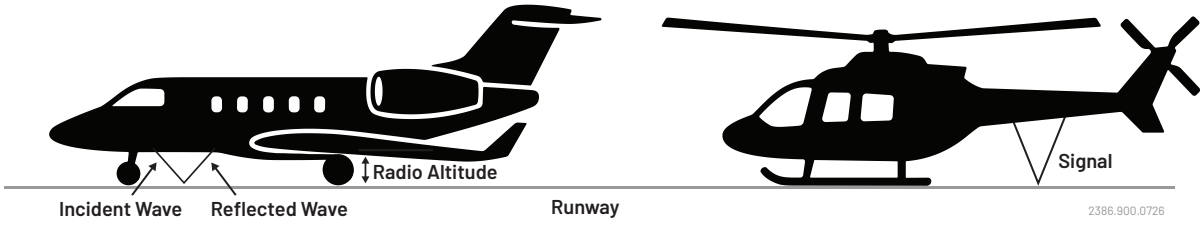
Simulating Zero Feet Altitude with the ALT-9000

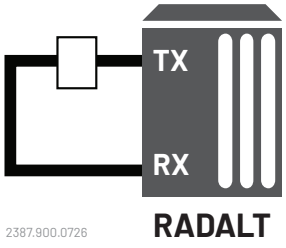


The ALT-9000 is a radio altimeter test system that simulates altitudes while performance testing a radio altimeter installed on an aircraft or on a laboratory bench. It simulates the actual delay and attenuation using coaxial and optical delay lines, connected internally via coaxial and optical relays. This allows the ALT-9000 to closely simulate the round-trip delay and attenuation from the RADALT's transmit to receive antennas. The ALT-9000 can simulate an altitude in 5-foot increments, however the ALT-9000 system is limited to a minimum simulated altitude of approximately 28 feet when 20-foot cables are used and 12 feet when 4-foot cables are used for the interconnect. (8 feet internal to the ALT-9000 and half of the coaxial length used for the interconnect.

Simulating down to zero feet is a challenge that may be achieved in one of two ways. IF zero-foot testing is required for adjusting the zero point of the radio altimeter installation, then the couplers in the ALT-9000 system should be removed from the aircraft letting the transmit signal from the RADALT reflect off the tarmac. This will give the installation in the aircraft the most accurate simulation when the altitude indicator must be adjusted for zero feet.



Using the tarmac for zero-foot testing



Zero Foot Bench Testing

The second method is testing at zero feet on the bench. A coaxial cable connects the TX of the RADALT through a series of attenuators (simulating RF signal path loss) to the RX of the LRU. This will be a closed-loop test of the RADALT, and no parametrics can be measured on the RF signal.

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