



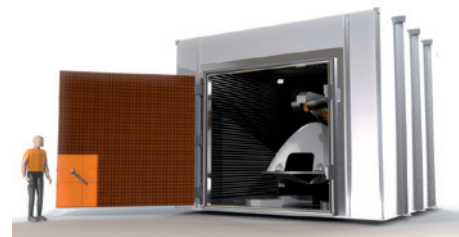
Meet the new RTCA-DO-213A requirements

Quality Standards RTCA-DO-213A have been updated, establishing more stringent requirements. AeroLab has been specifically designed to test commercial aircraft radomes with respect to these requirements. For example:

- The minimum distance for a FF range has progressed from $D^2/2\lambda$ to $2D^2/\lambda$ - AeroLab measures in NF. Near field measurements are now accepted.
- Sidelobe level evaluations are now accepted in 3D – AeroLab produces 3D patterns of side-lobe levels, providing improved visualization over principal cut views.

Measurement results from AeroLab show transmission efficiency, sidelobe levels, and beamwidth.

FREQUENCY BAND: 9.3 GHz - 9.5 GHz



Test repair quality in a fraction of the time spent in current test facilities

A multi-probe scan in the AeroLab takes less than 4 hours, providing results in 1/3 less time than current single probe scanners.

RTCA-DO-213A: Minimum Operational Performance Standards for Nose-Mounted Radomes

The RTCA-DO-213A performance standards include testing requirements to ensure that radomes continue to perform correctly after repair. Aerolab will perform tests to meet the following requirements:

TRANSMISSION EFFICIENCY

The radome class shall be determined based on its average and minimum transmission efficiencies, as defined in Table 1 below.

Table 1: Radome Class Definition

	Average	Minimum
Class A	90%	85%
Class B	87%	82%
Class C	84%	78%
Class D	80%	75%
Class E	70%	55%

BEAMWIDTH

The radome shall not cause the half power (-3 dB) main beam width, within the window area, to be increased by more than 10 percent.

SIDELOBE LEVEL

The radome category shall be determined based on the increase in sidelobe level, as defined in Table 2.

Table 2: Allowable limit for sidelobe levels with "Radome ON"

	Reference SL	> -21 dB	-21 dB to -40 dB	< -40 dB
Category 1	Area 1: Window area within ± 25 degrees in azimuth and ± 10 degrees in elevation	No more than a 1 dB increase	No higher than $y = Ax + B$ with: $x = \text{SLL radome OFF}$, $y = \text{SLL radome ON}$, $A = 12/19$ and $B = -128/19$	No higher than -32 dB
	Area 2: Everywhere else	The maximum of (-23 dB, Category 1 Area 1 spec +1 dB)		
Category 2	Everywhere	The maximum of (-23 dB, Category 1 Area 1 spec +1 dB)		