



Boeing Radome Solutions: Tri-band

Description

Boeing Radome Solutions: Tri-band is an OEM-quality aircraft radome that supports satellite communications at Ku-, K-, and Ka-bands, covering all frequencies currently used and planned for use, including the extended K- and Ka-bands. The radome and associated mounting plate can accommodate a wide range of high-gain Ku and Ka antennas from different suppliers and are compatible with all current Ku and Ka aeronautical SATCOM services.

Features

Highly capable

- Is fully qualified according to all FAA and Boeing environmental requirements, including those for bird strike, explosive decompression, rain erosion, and lightning.
- Supports K and Ka SATCOM over the full 3.5 GHz of transmit-and-receive bandwidth allocated for SATCOM service, including MSS, FSS, GSO, and NGSO bands.
- Supports the full 1 GHz of transmit-and-receive bandwidth allocated for military SATCOM, enabling operation on WGS, Inmarsat-5, YahSat, and others.
- Has low aerodynamic drag (0.05% to 0.17% Incremental Fuel Burn increase - depending Boeing aircraft model).
- Exportable as a commercial commodity item (ECCN 7A994).

Standard, flexible system interfaces

- Sized to fit a wide range of Ku and Ka antennas from Panasonic, Honeywell, ViaSat, Global Eagle Entertainment (TECOM), and others.
- Compatible with Ku and Ka services, including Panasonic eXConnect, Inmarsat GX, ViaSat exede, Global Eagle Entertainment, and O3B.

Easy to retrofit

- Mechanically interchangeable with legacy Boeing Ku radomes: constructed to the same size and shape as the Boeing Ku radome, with an identical mounting interface; suitable for aircraft crown (subsonic) installation.
- Can be painted in a range of colors, including military gray.
- Radome qualification reports currently available to support customer aircraft type certifications.



New Boeing Tri-band Radome with new universal mounting plate

A Boeing universal mounting plate is available for the 737 and 787. Other mounting plates are available for the 747 and 777. The new radome is interchangeable with the existing Boeing Ku radome, with first installation completed on a Boeing 737MAX airplane. Military version can include Lighting Diverter Strip.

- Service bulletins available for certified retrofit installations on Boeing aircraft models.
- Matching mounting plates available for Boeing commercial aircraft models.

Radome data package available

Package available with qualification reports to support aircraft type certification, including for bird strike and residual static stress-induced crack growth; static stress and margin of safety; failure modes and effects analysis; outline drawing and ICD; environmental tests, including lightning strike direct and indirect effects.

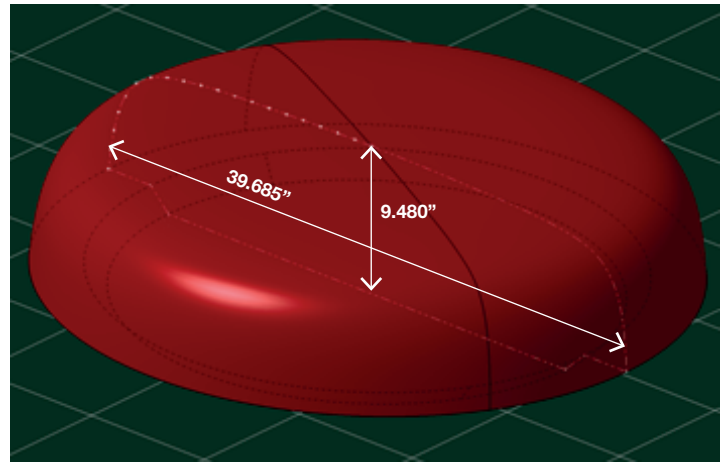
Radome physical characteristics

Parameter	Specification	Unit
Radome length	92.41	inches
Radome width	42.27	inches
Radome height	11.00	inches
Radome weight (nominal)	~70.00	pounds

Maximum available antenna swept volume

Swept-volume measurements are available for antennas mounted on the Boeing universal adapter plate and under the Boeing Tri-band Radome. Measurements include margins for dynamic movement and clearance for Boeing mounting lugs.

Note: Additional height of approximately 1 inch may be gained by mounting the antenna directly to the fuselage.



RF characteristics

Pcum99, 20 to 90 EL (values in parentheses are the analogous 5 to 90 EL levels and are provided for quick comparison):

Frequency band GHz	Pcum99 CP Loss (dB)		Pcum99 CP Cross-Pol Isolation (dB)	
	TBR	CbB	TBR	CbB
Ku-band Receive	0.6 (0.9)	1.6	-17.2 (-14.1)	-13.4
Ku-band Transmit	0.6 (0.8)	0.9	-28.8 (-24.8)	-20.4
K-band Receive	0.9 (1.6)	N/A	-21.7 (-18.8)	N/A
Ka-band Transmit	1.0 (1.7)	N/A	-22.2 (-21.1)	N/A

Note: (1) Final design predicted performance for elevation angles greater than or equal to 5 degrees.
(2) Pcum99 calculation excludes a nominal tail notch blanking sector.
(3) Pcum99 calculation states 99% probability of better than or equal to stated performance parameter.

Data provided by General Dynamics Ordnance & Tactical Systems

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Note: Specifications are subject to change without notice. Boeing part number 843-10310; currently available.