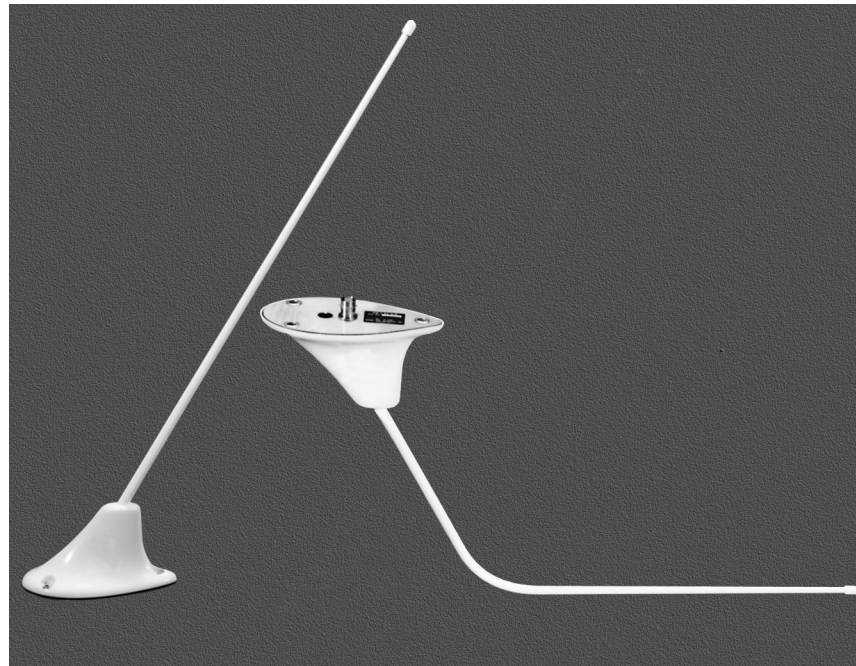


# DM C63-SERIES VHF COMMUNICATION ANTENNA

DM C63-1, DM C63-1/A, DM C63-2, DM C63-3/A AND DM C63-4/A

00752 – 467841/27 REV. **A**

# EXELIS



## INSTALLATION INSTRUCTIONS

The aircraft manufacturer's instructions for antenna installation take precedence over this installation guide. Please read all instructions before beginning installation.

The following is the recommended instructions for installation of the DM C63-Series Antennas. Installation must be made by qualified personnel, in conformance with applicable government regulations. Installed characteristics may be affected by factors beyond the scope of these notes. Manufacturer's warranty is limited to repair or replacement of any item which fails to perform as originally specified because of fault of material or workmanship within one year of installation.

Mounting region of airplane: ..... Top or bottom mount as close to aircraft centerline and as horizontal as possible. Attach to aircraft structure if possible, i.e., stringer/bulkhead, with its long dimension parallel to the longitudinal axis of the aircraft. Place supplied gasket between aircraft skin and antenna base before screw installation.

Precaution: If doubler plate is required for mounting, 0.090 to 0.125 thick aluminum alloy material should be used and it should be a minimum of 1/2 in. larger than the base of the antenna all around.

Surface of mounting region: ..... Flat surface

Required hardware: ..... Three, No. 10 flat head stainless steel screws

Torque requirement: ..... 10 in. – lb

No. of mounting holes: ..... Three

Mounting hole clearance in aircraft: ..... Clearance for No. 10 screw (0.213 dia)

Mounting hole pattern and dimensions: ..... See Figure 1

Minimum distance from obstacles: ..... As far as practical for the aircraft, a minimum of 3 ft is recommended. Close proximity to obstructions will affect optimum performance of the antenna.

Connector type: ..... BNC Female

Note: The attaching cable should be hard mounted (strain relief) as close as practical to the input connector of the antenna. The cable should not hang free which would cause it to vibrate and therefore produce excessive stress on the antenna's connector and cause premature fracture due to vibration fatigue.

Minimum diameter clearance hole for connector: ..... 0.50 dia min – 1.00 dia max

Leading edge position: ..... Antenna must be mounted with the two mounting holes facing the front of the aircraft and the 60 degree angle (tip of whip) facing the aft of the aircraft.

Note: Aerodynamic sealer is recommended around base of antenna and over screw heads.

### Notes:

- In order to obtain good radiation patterns, install the antenna on a horizontal metal surface near the aircraft centerline, as far as possible from metal obstructions, such as struts, other antennas, or the vertical stabilizer. The view in every direction from the antenna should be as unobstructed as possible.
- If the antenna is to be used on a nonmetallic aircraft skin, a ground plane at least 18" in diameter must be provided. This can be as simple as aluminum foil cemented inside wood or stiff fiberglass skin, or a doubler plate on a fabric-covered aircraft. The ground plane should be well-bonded to the airframe to prevent noise problems or erratic operation. Antenna mounting hardware must electrically connect the ground to the antenna.
- The RF cable run should be as short as possible to reduce line losses.
- Use the template to locate, then drill, the necessary holes for mounting the antenna. Remove all paint or other finish around the antenna mounting holes on both sides of the aircraft surface, doubler, or ground plane.
- Attach antenna to the aircraft, with gasket in place, using three No. 10 stainless steel countersunk head screws and suitable locknuts (a doubler plate and a gasket are supplied with antenna).
- Attach connecting cable with a male BNC connector.

- Precautions:
- The mounting location must be clean and free of dirt, grime, grease and other contaminants.
  - If the location chosen is not completely flat, make sure that the base of the antenna is not pulled out of shape when the screws are tightened. A metal tapered shim may be necessary in order to avoid distortion of the antenna base or the aircraft skin.
  - If gasket is supplied, do not change the gasket thickness, as this may detune the antenna.

## SPECIFICATIONS

### ELECTRICAL

Polarization ..... Vertical

Impedance ..... 50 ohms

Gain ..... Equivalent  $\lambda/4$  stub

Power ..... 50 W

Radiation Pattern ..... Omnidirectional

TSO ..... C37d

..... C38d

D0160C ENV CAT. .... F2-ABCXXXXXXXXXXXXXXXXXX

### MECHANICAL

Weight ..... 8 oz

Connectors ..... BNC Female

Finish ..... White

Note: All data contained herein is subject to change without notice.

## OUTLINE DIMENSIONS AND MOUNTING HOLE PATTERN

Inches (Centimeters)

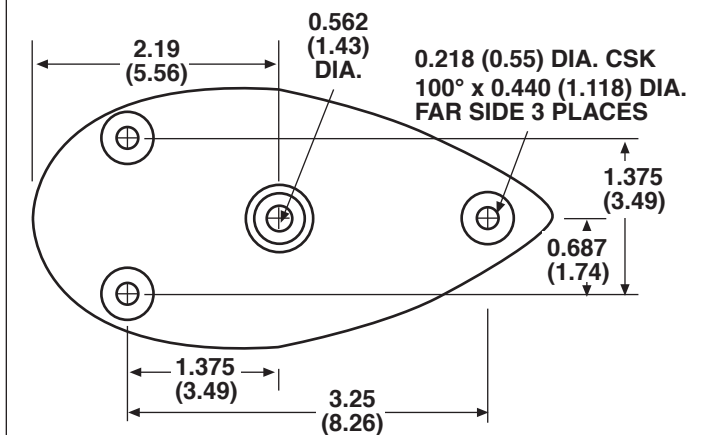


FIGURE 1

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## DESCRIPTION

The DM C63-Series antennas are VHF communication antennas designed for high mechanical strength with machine tapered aluminum alloy radiating elements. These vertically polarized antennas cover the frequency range of 118 – 137 or 138 – 174 MHz for both transmitting and receiving applications.

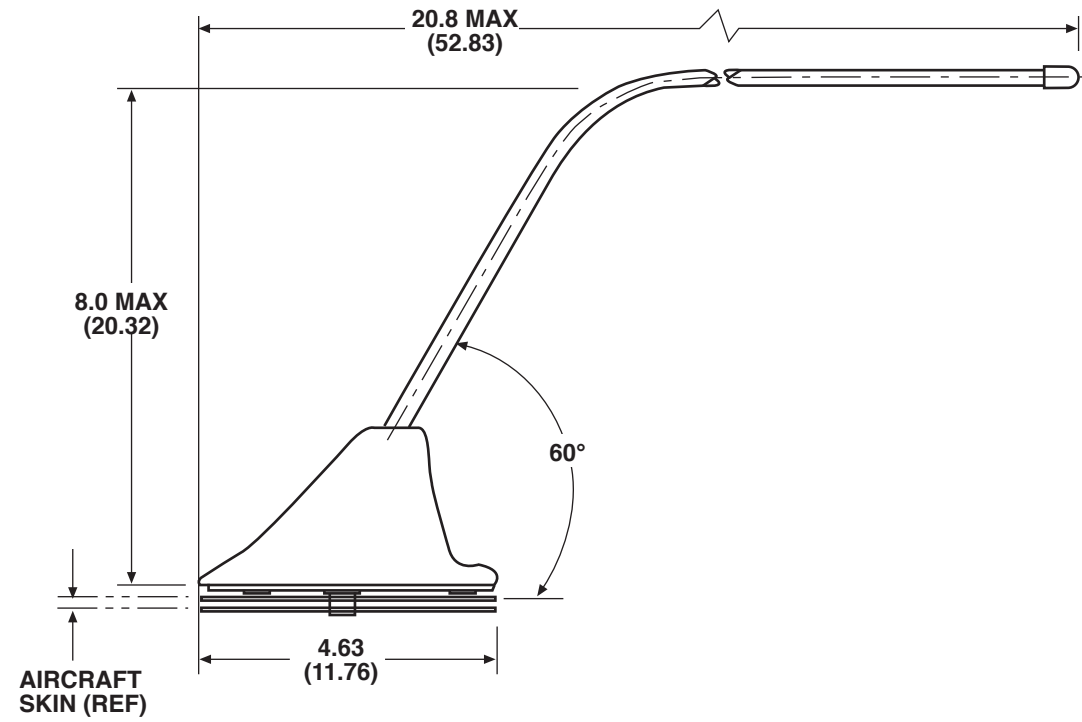
The DM C63-1/A and DM C63-4/A are designed for mounting on top of the fuselage. The DM C63-2 and DM C63-3/A are low-profile "bentback" radiating element designs for mounting on the bottom of the fuselage. They are well-suited for helicopter installations.

All DM C63-Series antennas are supplied with a gasket and a doubler plate.

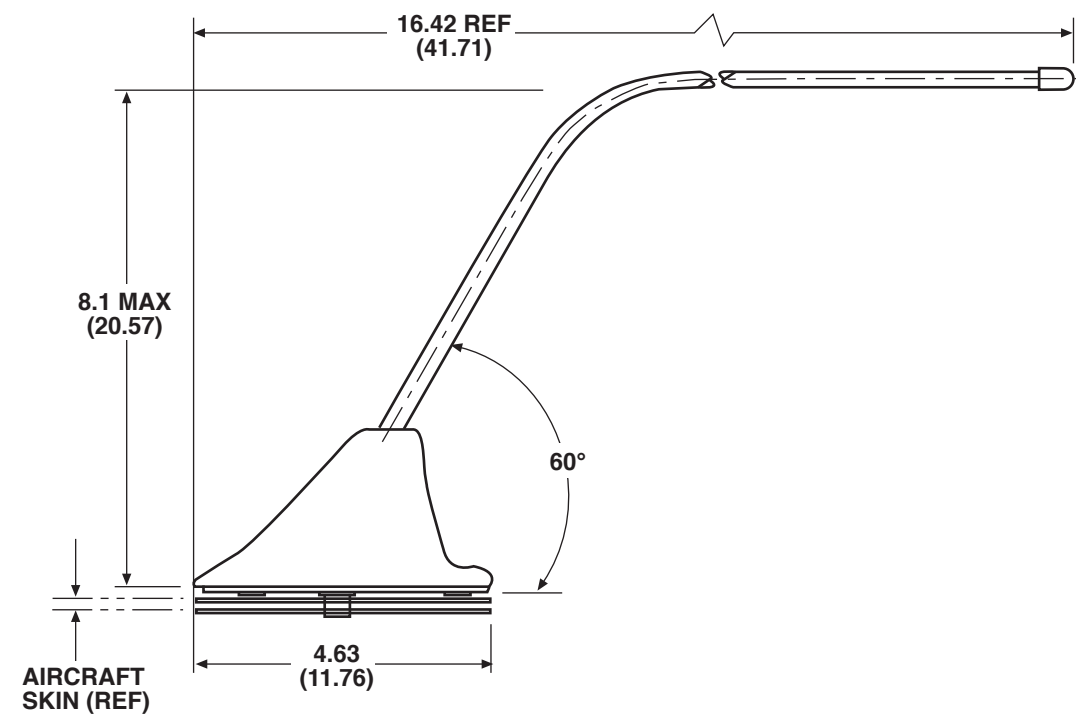
ANTENNA	FREQUENCY RANGE (MHz)	VSWR	TSO
DM C63-1A	118 – 137	2.0:1	C37d C38d
DM C63-2	118 – 137	3.0:1	C37d C38d
DM C63-3/A*	138 – 174	3.5:1	N/A
DM C63-4/A*	138 – 174	3.0:1	N/A

\* SPECIAL APPLICATION ONLY – TSO DOES NOT APPLY

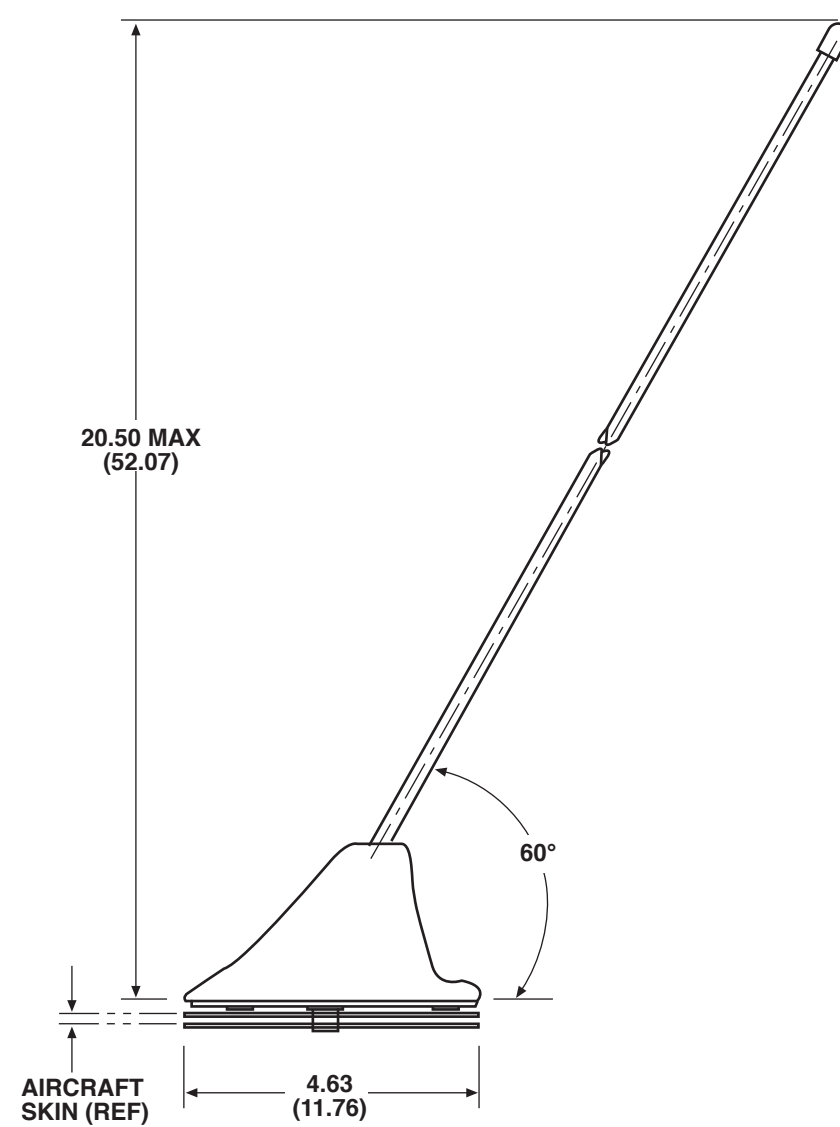
**DM C63-2**



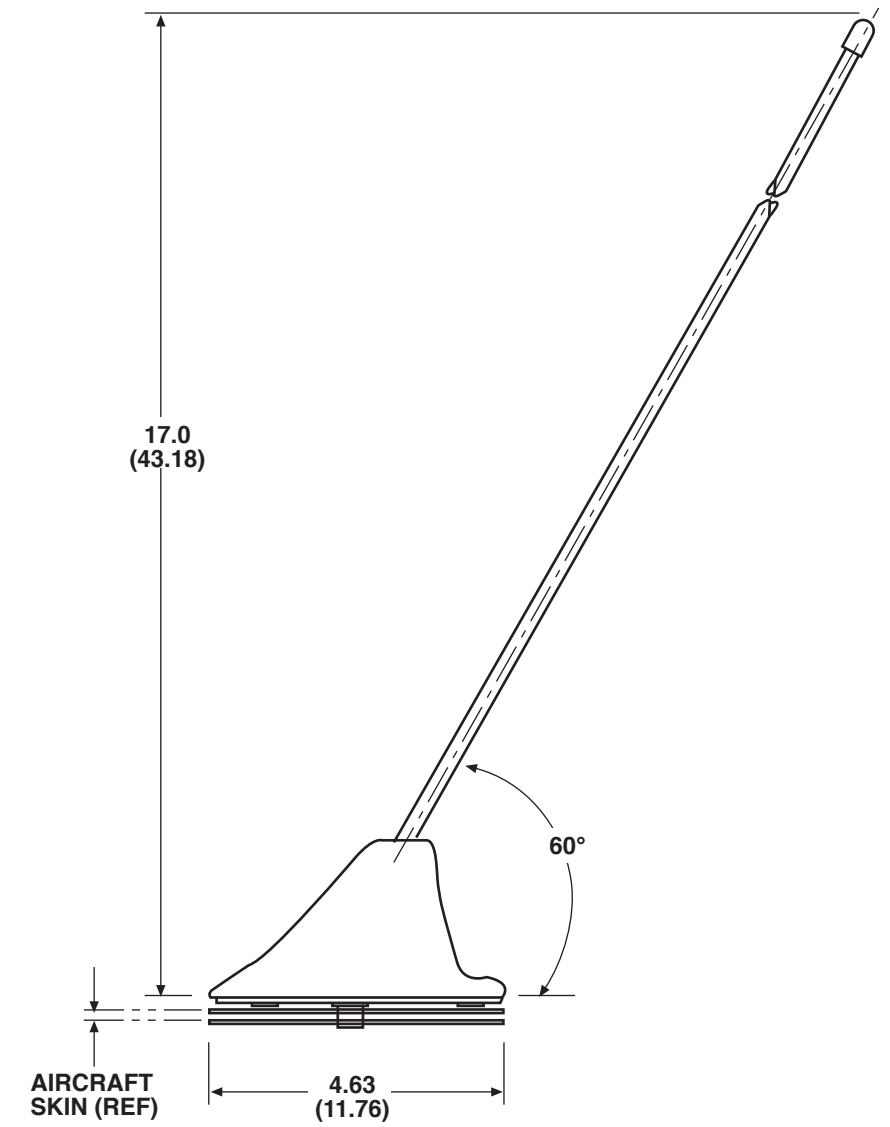
**DM C63-3/A**



**DM C63-1/A**



**DM C63-4/A**



**DM C63-SERIES VHF COMMUNICATION ANTENNA**  
DM C63-1, DM C63-1/A, DM C63-2, DM C63-3/A AND DM C63-4/A

**OUTLINE DIMENSIONS**  
Inches (Centimeters)

- Notes:**
1. 0.032 thick core gasket supplied with antenna
  2. Doubler plate supplied with antenna