INSTALLATION INSTRUCTIONS Comant Industries, Inc.	II A29546 Rev: B Ref: ECN 14-025

INSTALLATION PREPARATION:

1. Prepare the surface for antenna installations to ensure a ground contact with less than .003 Ohm resistance between the mounting screws and the aircraft skin. (A milliohm meter can be used to measure this). If bare metal surfaces are needed for surface preparation, they should be treated with Alodine 1200 or Iridite to minimize aluminum oxidation.

2. Drill holes in aircraft skin per the footprint shown in Figure 1 for the CI 295-300 Antenna-VHF/UHF. There are six Ø.206 ± .010, 100° countersunk X Ø.385" mounting holes in the antenna base. Clearance holes for the mounting screws in the aircraft skin are Ø 7/32". The clearance hole for both the BNC (F) connector is Ø.625". **Note:** The illustration in Figure 1 is not to scale and is for reference only. Do not use it as a template for drilling holes.

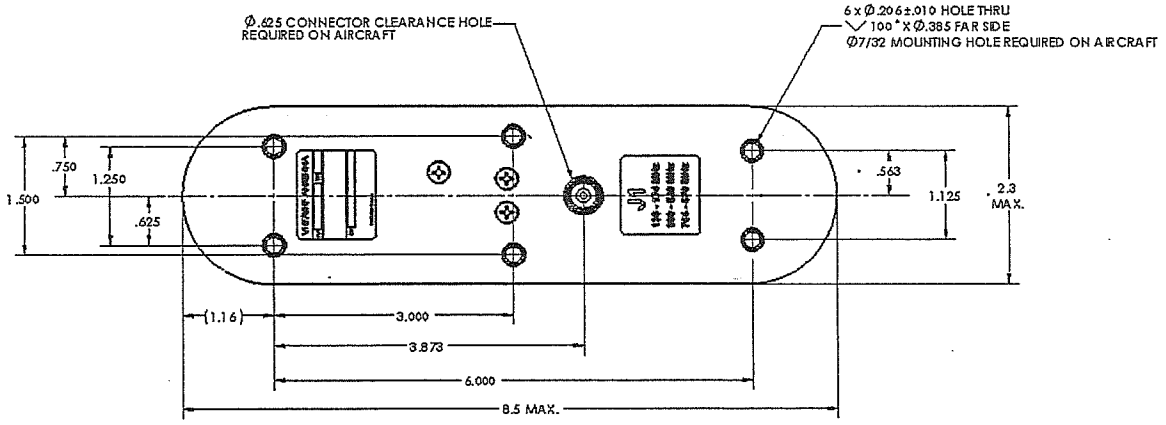

FIGURE 1 - CI 295-300, Antenna-VHF/UHF, Mounting Footprint

INSTALLATION:

Note 1: Metal adapter plates are **optional (not supplied)** but they should be used if the curvature or compound radius of skin is such that antennas cannot be directly installed.

Note 2: The CI 295-300, Antenna-VHF/UHF, VHF (J1) (136-174 MHz) section is more dependent on ground plane size than the UHF (J1) (380-520 MHz / 764-870 MHz) section since it is tuned over a lower frequency range, which has a longer wavelength. Ground plane size and the quality of the electrical bond, between it and the antenna base plate, is an important consideration since it can influence the antenna's tuning characteristics (VSWR/Return Loss).

Note 3: The CI 295-300, Antenna VHF/UHF, is tuned at the factory on a standard ground plane (10' X 10') but will function well on a smaller 9½' X 4' ground plane. However, reducing the ground plane size further may begin to affect the CI 295-300 VHF VSWR/Return Loss. Although there are practical limitations, the ground plane for the CI 295-300 Antenna should be as large as possible.

Note 4: The CI 295-300, Antenna-VHF/UHF, was initially designed for belly mounting on aircraft but can also be top mounted. A coaxial cable is required to connect the antenna to the radio transceiver in the cockpit control panel. The use of a high quality 7' long RG-400 coaxial cable between the antenna J1 BNC (F) connector pads-down and improves the Return Loss of the antenna at the J1 Port by about 3/4

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INSTALLATION INSTRUCTIONS, LIMITATIONS, AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS (ICR) FOR CI 295-300, Antenna-VHF/UHF (136-174 MHZ / 380-520 MHZ / 764-870 MHz)

PART IDENTIFICATION SUPPLEMENT:

The CI 295-300, Antenna-VHF/UHF, is categorized as a **"NON-TSO and NON-PMA"** antenna. It may be used with any compatible radio transceiver described in the equipment compatibility section and is limited to the environmental test categories: **RTCA/DO-160G [F2X]ACE[R(C,C1)H(R)U2]XSFSXSXXXX[XXX][XX]X [XXXXXX][XX]AXX & MIL-STD-810G, Method 514.6, Vibration Categories 14, 24.**

THIS DOCUMENT IS NOT AN INSTALLATION AUTHORIZATION

The CI 295-300, Antenna-VHF/UHF, delivers optimum performance only when installed correctly. To ensure adequate structural strength of the aircraft for associated air loading during flight, use of a backing plate or doubler **(not supplied)** is highly recommended. For complete information, refer to **FAA ADVISORY CIRCULAR 43.13-2B.** It is the responsibility of the installation agency to determine the appropriate and adequate antenna installation. The CI 295-300, Antenna-VHF/UHF is designed to provide radio transmit and receive functions over three frequency ranges via the VHF/UHF (J1) BNC (F) (136-174 MHz / 380-520 MHz / 764-870 MHz) connector.

EQUIPMENT COMPATIBILITY:

The CI 295-300 Antenna VHF/UHF is designed to operate with the following equipment:

1. Standard 50 Ohm radio transceiver operating over the VHF136-174 MHz and UHF 380-520 MHz / 764-870 MHz frequency bands with a maximum output power of 10 watts.

TYPE OF AIRCRAFT:

1. The CI 295-300 Antenna VHF/UHF is designed for installation on helicopters and fixed wing subsonic aircraft with turbojet, turbofan or reciprocating engines.

LOCATION:

1. The CI 295-300, Antenna-VHF/UHF, can be mounted either on the bottom or top of the aircraft fuselage. **Note:** The CI 295-300 Antenna VHF/UHF must be at least three feet away from any other antenna to avoid interference.

2. When mounting the CI 295-300 Antenna VHF/UHF on the bottom or top of the aircraft fuselage, it must be clear of any metallic projections such as other antennas or landing gear.

Prepared By:	Date:	Engineering:	Date:		
S. Adams	3/7/14		03/07/14		
Production	Date:	Sales	Date:	Quality Assurance:	Date:
	3/7/14		3/11/14	S. Adams	3/7/14

dB with only a minimal increase in insertion loss of about 1/3 dB at the expense of gain but preserves the antenna tuning. A longer cable may be used but there is a dB for dB trade-off in antenna gain with the addition of more coaxial cable insertion loss.

1. Mount a CI 295-300, Antenna-VHF/UHF, using six #10,100° stainless steel countersunk mounting screws **(not supplied)** by sandwiching the aircraft skin between the antenna and the internal backing plate or doubler either with or without a gasket (**not supplied**) between the bottom of the antenna and aircraft skin. Gently tighten the hardware so that uniform stress is placed on either side of the antenna base and make sure that the connectors have sufficient clearance through the aircraft skin. Apply a torque of 20-25 in-lbs to each mounting screw. Apply a small, smooth fillet with RTV sealant around the periphery of the antenna.

2. For maximum signal strength, the length of the coaxial cable to the antenna should be minimized and be as short as possible. Connect the transceiver coaxial cable with the TNC (M) connector to the VHF/UHF (J1) TNC (F) connector on the antenna and hand-tighten.

NOTE: PAINTING A CI 295-300, ANTENNA-VHF/UHF, MAY DEGRADE PERFORMANCE AND IS NOT RECOMMENDED. MODIFICATION OF ANY COMANT INDUSTRIES PRODUCT WILL VOID THE WARRANTY.

COMPOSITE AIRCRAFT INSTALLATION:

1. Except for preparation instructions, installation is the same with the addition of a ground plane, as indicated in **FAA ADVISORY CIRCULAR 43.13-2B, Section 310,** and may enhance performance. Antenna lightning protection can be improved by grounding the coaxial shield with an appropriate metal mounting clamp at any convenient location between the transceiver and the CI 295-300, Antenna-VHF/UHF, connection.

2. If the skin on the helicopter is not metallic, but made from a composite material, the Astrostrike material just below the composite material skin may be used as a ground plane. However the antenna base plate must make excellent electrical contact with it either directly of via the antenna mounting screws.

LIMITATIONS:

1. Installation of these products should be done by qualified personnel.

2. Contact Comant Industries for specific aircraft applications and limitations.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS:

1. There are no special storage requirements for this antenna; however, it is recommended the antenna remain in its original packaging until it is installed to prevent damage to the antenna.

2. Painting a CI 295-300, Antenna-VHF/UHF, may degrade performance and is not recommended. Modification of any Comant product will void the warranty.

3. There is no recommended maintenance schedule, nor are there any recommended cleaning, inspection, testing, lubricating, calibration, tuning, and/or adjustments required for this non-serviceable antenna.

4. There are no repair or overhaul instructions for this sealed, non-repairable antenna.