

The CM installer must consider the following criteria:

- 1) Position the antenna such that it is oriented vertically

The modem assembly is mounted to a bracket using Nylatch fasteners. The orientation of the modem should be such that the antenna points up or points down. Because of the high multi-path within the aircraft, the orientation may be offset slightly from vertical without a substantial penalty in performance.

- 2) Position the antenna such that it is at least 2 cm from persons

The modem assembly should be mounted behind a panel as a barrier to any human contact. There should be no possibility that the antenna could be contacted and possibly damaged. Because the antenna is hidden behind a panel, sufficient clearance must be provided to ensure inadvertent, incidental human exposure within 2 cm to any part of the antenna is not possible.

- 3) Provide a drip-shield if the CM is exposed to dripping water

The modem assembly is not water-proof. If installed in a location where dripping water is possible, a drip shield must be installed above the modem, and appropriate drip loops applied to the cable assembly connecting to J1.

- 4) Avoid locations enclosed in conductive material

The aircraft fuselage provides a conductive barrier to free-space radiation. The cabin windows, the doors and hatches, and other small penetrations provide a limited aperture for the cellular signal to propagate. In many cases, the modem assembly will be installed within a cabin monument or cabinet. It is strongly encouraged to have a minimum of one non-conductive surface near the cell modem (within the cabinet or monument) to allow for acceptable performance. While placing the modem wholly within a conductive enclosed monument has been shown to operate, the additional path loss will limit service only to airports with the strongest cellular service coverage.

- 5) Favor locations centrally positioned within large, open cabin areas

Signal strength surveys have shown a clear trend that placing the cell modem assembly central to large open cabin areas has the best performance regardless of the direction to the servicing cellular base station. Alternatively, placing the modem within the galley, or in some cargo holds, has dramatically poorer performance.

- 6) The CM is stand-alone cooled allowing for compact installations with limited airflow

The CM consumes about 10 W of power and has been shown to operate in constrained locations relying on stand-alone cooling between -15 to +70 deg. C.