

FORCED AIR COOLING APPARATUS AND METHOD**ABSTRACT**

5 The present invention relates to a forced air cooling apparatus for use in cooling heat generating devices, in particular electronic card cages and avionics equipment in a military aircraft. The apparatus comprises a casing that is in fluid communication with a cold air source, the casing having an inlet port for receiving the cold air, a forced air cooling module for distributing the cold air to the heat generating devices, and an outlet port for exiting cold air that has been heated by the heat generating devices. The forced air cooling module comprises a primary duct having a fan installed therein, a plurality of secondary ducts affixed orthogonally to the primary duct, and a plurality of spray bars mounted along each secondary duct. Orifice plates are positioned within the inlet ports and below each junction where the secondary duct intersects the primary duct, to direct adequate amounts of cold air to the heat generating devices. The present invention further provides means of reducing electromagnetic interference in the casing, for instance, by installing EMI filters within the outlet port and downstream of the orifice plate in the inlet port.

20 **(Figure 3)**