12-Foot Transportable C-band Radar Antenna

Microstar's twelve foot transportable C-band Radar Antenna incorporates design features which make it optimum for transportable applications. With the wings removed, the width of the antenna is 7 ft. 2 in., so that the antenna can be transported over highways in the "cup-up" configuration. The transport height of the antenna is 51 inches, allowing it to fit easily inside standard truck bodies or sea-going shipping containers.

Additionally, the feed system is not disassembled for transport, so that no adjustment or re-calibration is necessary when the antenna is re-deployed. Two people can easily remove the wings, which weigh approximately 75 pounds each, and the total antenna weight is less than 600 pounds.

The antenna is very stiff, having a resonant frequency greater than 20 Hertz. The reflector front and rear skins are 30 mil thick and the reflector core is aluminum honeycomb. Each skin is a layup of 10 mil thick high modulus graphite-epoxy outer layer over a 20 mil thick fiberglass inner layer. The reflector is reinforced using four full-length composite stiffeners made of graphite-epoxy over a 2 inch thick rigid closed-cell foam core.

The feed uses an eight-horn system to provide high performance 3-channel monopulse operation. The feed illuminates a 20 inch diameter subreflector, which in turn illuminates the main reflector. The subreflector is supported by a thin wall quartz-epoxy cone. The monopod feed support is very stiff, with a very high resonant frequency.

Three of these antennas are currently in use by British Aerospace Systems.

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