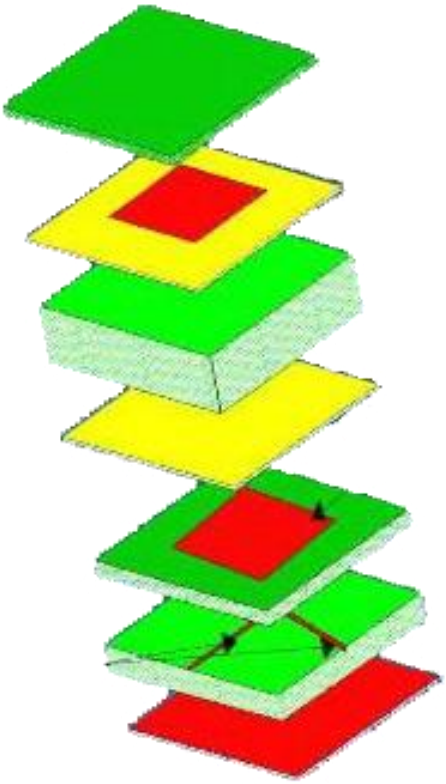
Multilayer Printed Antenna Technology

Space Applications Centre of ISRO has developed multilayer printed antenna array technology. Salient features of the technology include light weight structure, can be made conformal to the surface, computer controlled automated fixture for aligning layers, inspection of layers and bonding of layers. There is an ever increasing demand of multilayer printed antenna from mobile communication to very sophisticated space qualified active phased array antenna systems.



The design includes the usage of new light weight & low dielectric constant material for high radiation efficiency, low surface wave propagation and low cross polar suppression. Development includes fixture capable of performing surface roughness using laser, inspection of PCB, high speed drilling, vaccum bagging for bonding all the antenna layers and vaccum gripping for pick and place

Terminal Specifications

Antenna Type : Planar

Cross Polarization : Better than -30 dB

Beam width and Gain : As per specifications (efficiency better than 60%)

Bandwidth : Up to 40% (2.1 VSWR)

Polarization :Vertical/Horizontal/Circular

Size : Up to 1.2 M x 1.2 M

Alignment : 20 micron

Inspection : 10 micron

Repeatablility : 5micron

Curing Chamber : 1.3 M x 1.3 M

Magnification : 50 x / 100 x

Clean Room : Class 1 lac

Drilling Speed : 40,000 rpm